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The COMPUTER PAPER

BRITISH COLUMBIA'S COMPUTER INFORMATION SOURCE

Vol 1. No. 7 August 1988

Local Area Networks

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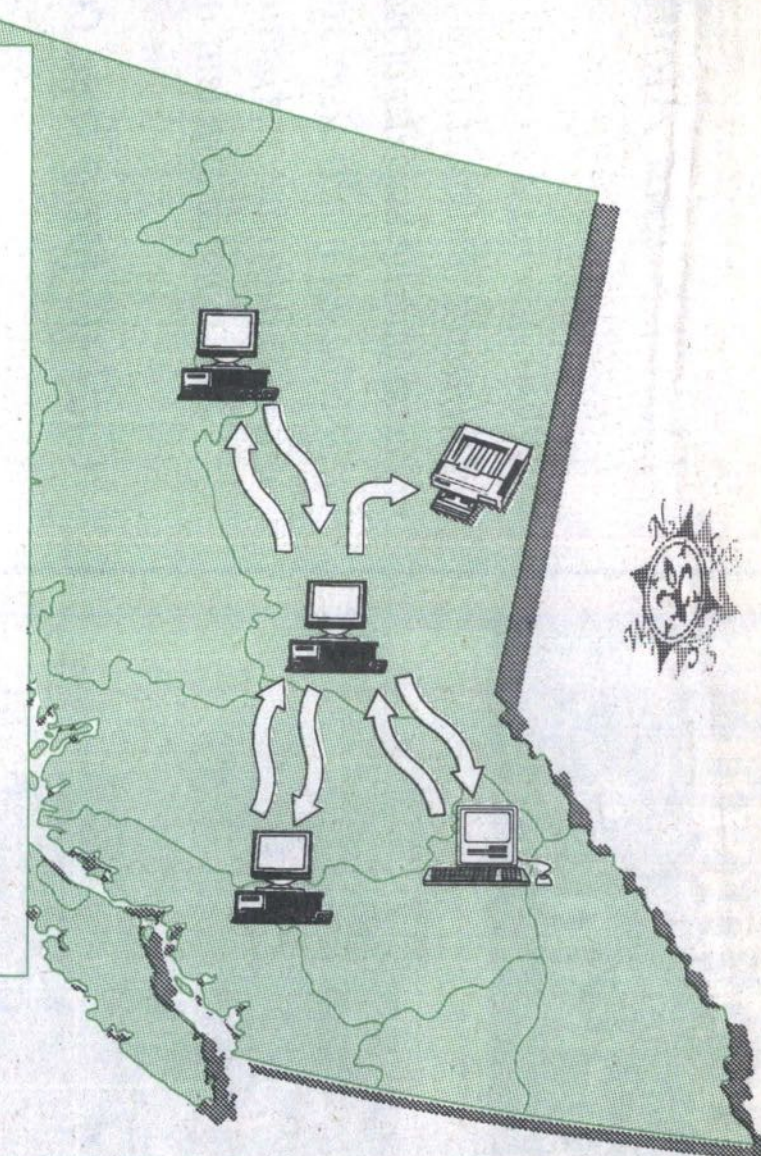
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A LAN Barbeque: Computer Networks Made Easy

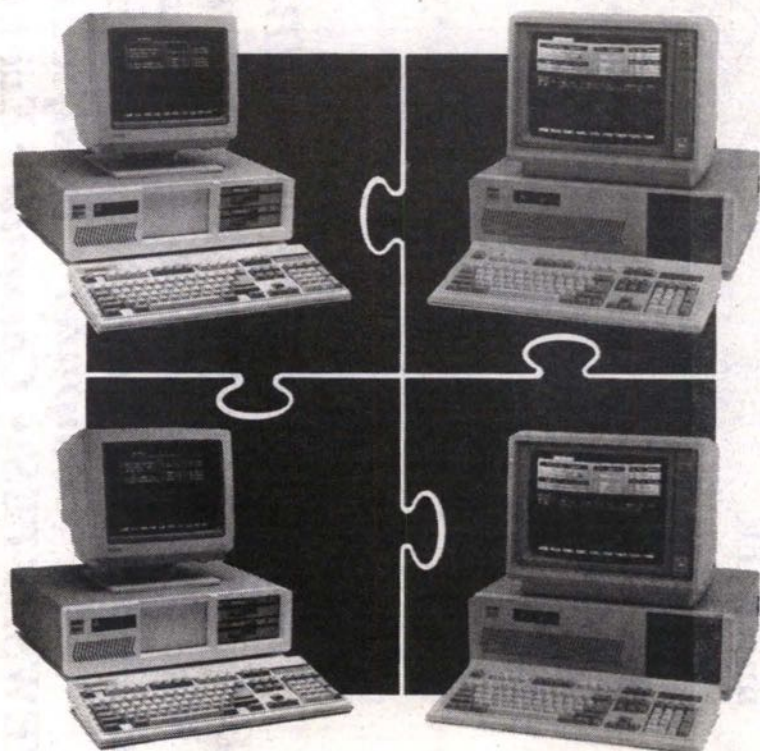
TOPS Network: From Mac to PC and Back

EasyLAN II: A Shareware LAN



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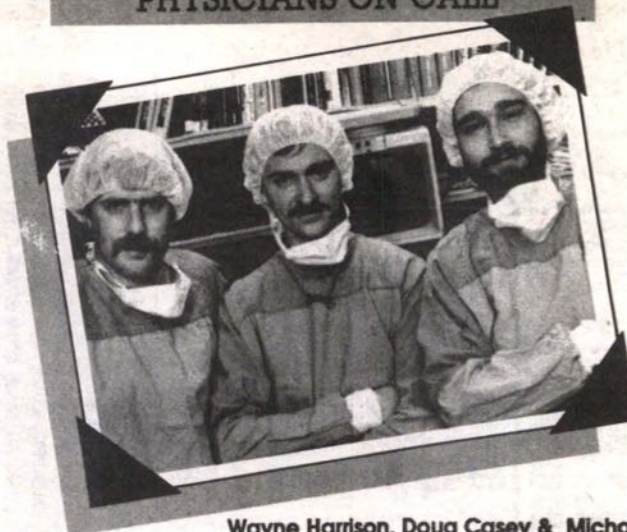
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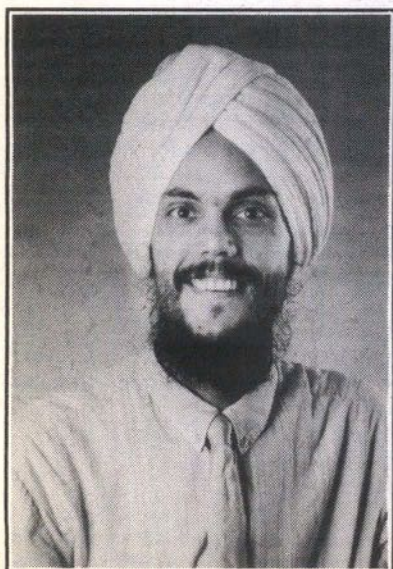
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The COMPUTER PAPER

BRITISH COLUMBIA'S COMPUTER INFORMATION SOURCE

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FROM THE EDITOR



I met and talked with two people this month who had not had much experience with computing. They both were just now becoming involved and expressed the wish that they had gotten into it earlier. There was the feeling that they had been left behind now with so much information passing by. It is true they have missed much by not catching onto the speeding information revolution happening right now. It is not however true that this is a fatal mistake. Any one grasping on or taking an interest even at this point stands a reasonable chance of staying current. The load of information is vast and so much new happens every day. But there is a point to keeping current, because it is affecting all of us in our jobs, in our entertainment and in our environment. We have to keep tuning in to what is going on around us to stay economically viable.

The federal government obviously believes this as they are spending a large amount of money on a campaign to promote science and technology. You may have seen or heard their advertisements.. They are the ones that remind us that there are only X number of days till the year two thousand. They are trying to nudge us forward into the high tech sectors of computers, technology and the information age.

We also take this seriously and we are making our efforts in our own small way to help you keep up with this barrage of information. We feel strongly that this information needs to be readily available and have a regional and local flavor to give it a context.

This issue is about Networks. Any time you plug two or more computers together you get a network. Networks are a logical extension of single computing. Once you realize the power of a single machine, you start to think of all the ways you could enhance other parts of your business, association or school. It is a logical progression for many businesses who started with one PC to do their accounting, to want to achieve similar benefits in other areas, such as order entry, inventory or point of sales. Enter the Local Area Network (LAN)

We have looked at a variety of ways to integrate computers and it has been a real education process for us as well as we struggle with our own networking environment at the offices of The Computer Paper. Small does not necessarily equate with simple. Good luck to any of you who are attempting this process we know you will need it. I hope you enjoy the issue and get some insights into networks. We have tried to include enough to keep both the novice and the more sophisticated readers happy.

So far no one has chewed us out for our change of format. The consensus is in and it appears you liked it. Please keep the feedback coming, we are always happy to hear from you and what you would like to see more of.

We are looking forward to meeting many of you live at the coming Pacific Rim Computer and Communications Show in November Watch for us down by the Exhibitors Lounge booth #193A. There is also a New and Used Computer Swap Meet planned for October. Watch for that one for some good bargains as well.

Until next issue

Kirtan Singh Khalsa
Publisher/Editor

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As seen in PC Magazine



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NEW PRODUCTS



EXECUFOLD Envelope Folder

Tired of folding envelopes or invoices? ABBA Computer Corporation & EXECUFOLD has announced the introduction of what they believe is the most practical and convenient desk top paper folding machine to date. Retailing for \$298, the EXECUFOLD can easily process a 3 page, stapled business size letter, in less than 5 seconds, with far more consistency than by hand, which can take up to 30 seconds. Charities? Volunteer help? Monthly statements? Give your office a break with EXECUFOLD. (416) 477-4033 or write to Matthew Lapensee, 21 Amber Street, Unit 4, Markham, Ontario, L3R 4Z3 for more information.



ACCPAC BPI LanPak Released

VANCOUVER B.C. - June 1, 1988 - COMPUTER ASSOCIATES CANADA, LTD., today announced the release of the ACCPAC BPI LanPak, which provides for accounting system growth and allows multiple users to share accounting resources. The company also announced significant enhancements to ACCPAC BPI General Accounting, Accounts Payable, Accounts Receivable, and Inventory Control modules.

"ACCPAC BPI is a sophisticated accounting system positioned at an attractive price, and considered throughout the industry as among the best mid range products on the market. Now with networking, the product is even more powerful, and we have become the first accounting software company to provide networking for a low cost accounting system," said Norm Francis, Vice President for Computer Associates Canadian Operations.

Up to eight users can share ACCPAC BPI modules and data simultaneously. For example, users can access, edit or view account, customer or vendor information at the same time. Multiple users may also share printers and disk storage.

New Macintosh Hard Drives BC Grown

ADAM Peripherals Inc. of Richmond, has acquired the exclusive rights to the MACFLY hard disk drive for Apple computers from Computer Brokers of Canada (CBC) for an undisclosed sum. Canadian microcomputer dealers may call either CBC or ADAM directly to source their MACFLYs.

ADAM Peripherals Inc. is an Apple Certified Developer focusing on the development and distribution of add-on products for the Apple marketplace. Specializing in mass storage devices, the MACFLY will play a pivotal role in the expansion of the line to include internal and external SCSI drives over a wide range of capacities.

The company's expanded new Richmond facility will house assembly, service, warehouse and administrative operations. An announcement regarding a new Eastern Canadian operation will be made in the near future.

CONTACT: Henry Vehovec, President, 12-4631 Shell Road, Richmond, B.C. V6X 3H4 276-2326

Bedford on Mac Hits Hot List

VANCOUVER - Three months ago Bedford Software announced the release of Simply Accounting, a Macintosh integrated accounting program intended for small to medium sized busi-

nesses. This June, Simply Accounting hit Softsel Computer Products' Macintosh Resource "Hot List," the only accounting program to make the listing.

bedford

Simply Accounting

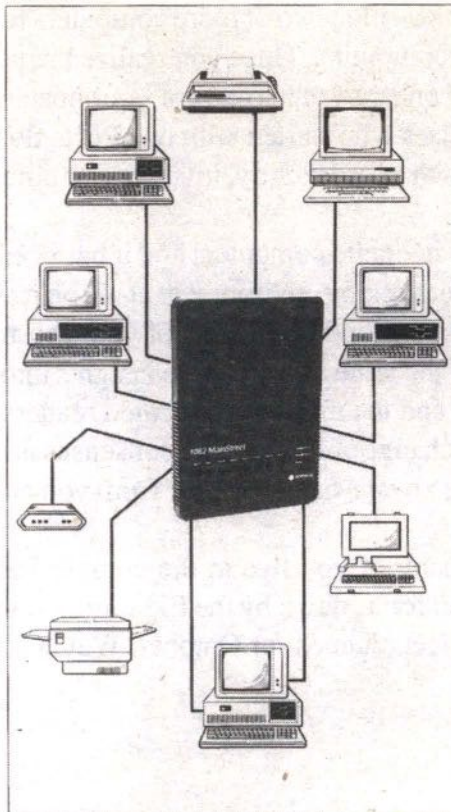


Bedford's Vice President of Marketing, Tom O'Flaherty, is elated that Simply Accounting is being so well received. "Rising to the Hot List so quickly affirms our belief that there are many consumers in need of a good small business accounting product," he said. "Simply Accounting is designed to allow business people to spend more time conducting business by simplifying and improving their bookkeeping."

When Softsel and Bedford implemented their distribution agreement in late 1987, Softsel's president, Michael D. Pickett, suggested that Bedford's products would meet the needs of the exploding small business marketplace. "It appears consumers are discovering that Simply Accounting is suitable for their bookkeeping requirements," he said. "We were confident that Bedford would make the Hot List. It was only a matter of time."

Bedford publishes two integrated accounting programs; Simply Accounting, and Integrated Accounting for the IBM-PC and compatibles. Both provide an understandable, easy-to-use accounting solution for small to medium sized businesses. Each program fully integrates six common accounting functions on a single disk so that information posted in one ledger is immediately transferred to other ledgers.

At a suggested list price of \$449.00, Simply Accounting will provide an appropriate, effective accounting solution that will practically sell itself. The product is available through most major distributors.



Newbridge Announces PC Network Software

KANATA - A powerful networking software package compatible with the MICOM Data PBX series was announced today by Newbridge Networks Corporation.

"The MICOM Data PBX is one of the best selling circuit switched devices in the world, but a lack of customized PC compatible software has limited its use in a PC networking environment," said Mike Pascoe, Newbridge Vice President & General Manager of the Canadian and International Business Region. "EasyStreet provides many

TO THE EDITOR

Dear TCP

What a nifty little paper! Newsy (where it counts) informative (re: local activities) and very readable. Good luck with your publication. Keep up the good work.

Respectfully Yours

F.A. Koch

President, Bullfrog Recording Company Ltd.

Editors love letters like these and they are almost guaranteed to get published. Thanks.

To The Editor

I just discovered your excellent newspaper at the communications Day event at the Royal BC Museum in Victoria on June 18. I picked up a copy of your April and May issues and read them from cover to cover. We are a non-profit organization that is growing quickly. We are just now in the market looking to rent/lease/buy some computers and Desktop Publishing software. The information in your free paper has proved to be invaluable to us. Where in Victoria can we obtain your newspaper? Thanks very much for your ace of a paper.

Robert Barlow

Healing Exchange Association.

P.S. Hope to see more coverage of advertisers in the Victoria region.

Dear TCP

I am writing to say that I really enjoy your periodical. Where can we get The Computer Paper in Victoria.

David Hume
c/o Softwords
Victoria

We are working on getting up our coverage in Victoria. Watch for an expansion in the fall. In the mean time we will send you subscriptions. Tell your local merchants about us. Thanks.

MASTHEAD

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powerful networking features, which adds a great deal of value to a MICOM installation. The result will be more efficient use of existing hardware, and greatly expanded capabilities for PC environments."

EasyStreet is a RAM-resident program which gives the PC DOS user many powerful networking capabilities without disrupting normal DOS operation. EasyStreet can be activated by a simple "Hotkey" sequence, which suspends the current DOS activities and "pops-up" the main menu screen. All functions are organized into pull down menus, with extensive context sensitive help available using a single keystroke. When finished, the exit key returns you to DOS at the point where you left it.

EasyStreet offers a number of advanced features including:

- network connections with a single keystroke
- printer redirection to any networked device from any DOS application
- PC Phone interactive messaging
- wildcard binary file transfer to or from other PCs. File transfer can be carried out in background while normal DOS work is performed, and doesn't require any attention from the remote PC user.
- Screen Snap Shot
- terminal emulation for accessing host computing services
- user programmable scripts to automate common interaction such as modem dialing, printer configuration, and auto log-on
- background operation logging and monitoring
- several levels of security against unauthorized remote access.



New Public Domain Clearing House Announced

PD-SIG recently announced the opening of a clearing house for public domain, shareware and freeware software. PD-SIG which stands for Public Domain - Special Interest Group, will distribute Public Domain and Shareware software for IBM Compatibles, Atari ST, Amiga and Macintosh computers. Members dues are not required by PD-SIG. When you purchase a catalog from the company, the dues are included in the price of the \$9.95 catalogue.

Included in the catalog are a membership card with number to use in ordering software, a catalog of over 2000 disks of software for the associated computers and an 80 page mail order hardware and commercial software catalog. A bonus offer to the first 500 applicants is a free digital clock and a copy of a technical reference manual for the PC/XT compatible. Disks for PD-SIG members will be \$1.95 for 5.25" floppies and \$2.95 for 3.5" disks. Non-members will pay \$3.95 and \$4.95 respectively. New software additions to the library will be announced via a "Hotlist" which will be circulated regularly.

PD-SIG is also looking for new PD and Shareware programs to add to the Library.

PD-SIG hopes to produce a CD-ROM containing the library in the third quarter of 1988 with a target price of \$179.

For further information on PD-SIG, contact Robert Scott, PD-SIG 65-13880 74th Ave Surrey B.C. V3W 7E6 Telephone (604) 597-0881



QMS's New Laser Prints Tabloid Size.

QMS Inc. recently announced the latest member of its Lasergrafix printer family, the QMS Lasergrafix (R) 2200. It is the first printer in its price class to offer users print speeds up to 22 pages per minute and 11" x 17" paperhandling. The QMS Lasergrafix 2200 also features unique capabilities, including an HP-GL emulation, for computer-aided design and engineering (CAD/CAE) and IBM mainframe users.

The QMS Lasergrafix 2200 is the first laser

printer with B-size (11" x 17") paper handling to include an emulator for a Hewlett-Packard pen plotter. The print system provides engineers and other users with faster turnaround of A- and B-size plots, and eliminates the need to physically load paper in a pen plotter for each plot.

With standard RS 232 interface, 7 MB of RAM, 36 resident fonts, dual paper input bins and one input tray, the QMS Lasergrafix 2200 retails for C\$21,995. Also included as standard features are emulators for Diablo and Qume letter quality printers, Tektronix 4010/4014 graphics and HP 7475A pen plotter (HP-GL). The QMS Lasergrafix 2200, based on a Panasonic FPL-301 print engine, has a recommended monthly usage rate of 20,000 pages per month. The printer, available in late June, will be sold to end users, OEMs and VARs directly from the Print Systems division of QMS Computer Products Ltd.



The Biggest Game In Town

Taito Software, Inc. a major player in the coin operated video arcade games market in Japan with over 100,000 arcade machines, is launching its North American campaign on the game software industry from North Vancouver. They recently announced the release of five new titles for the Commodore 64 - Alcon, Arkanoid, Bubble Bobble, Renegade and Rastan. The company plans releases of these and other titles on a variety of operating systems, including IBM, Apple II, Amiga and Atari ST.

Taito's launch in the consumer software market began in 1987 with a number of programs designed for the Nintendo Entertainment System. Taito is still very much attached to the Nintendo business as a third party licensee.

Vancouver was chosen as the headquarters of the company's North American operations. Alan Fetzer, Taito's president, commented: "Vancouver is the site of recent R&D and technological growth. Not only will its proximity to Japan facilitate shipping and operations, it will also profit from expanding business activity in the Pacific Rim."

Contact: Michele Portello (604) 984-3344. 267 West Esplanade, North Vancouver V7M 1A5

High Quality Clip Art



Despite a deluge of clip art, fine quality graphics are still few and far between. It is refreshing now to see these new packages being offered. Metro ImageBase, a subsidiary of Metro Creative Graphics, Inc., has announced the introduction of

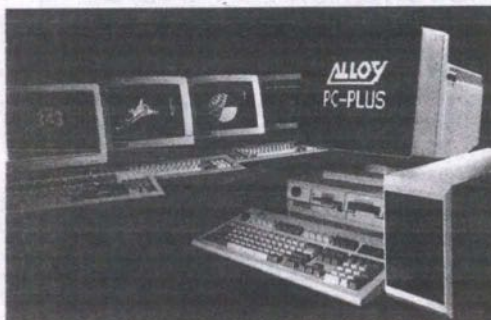
ImageBase electronic art. ImageBase Art is high-quality, high-resolution artwork on diskettes for desktop publishers using Macintosh and/or IBM PC systems.

From its library of over one million images, ImageBase has digitized its high-quality artwork at 300 dpi (vs. the 72 dpi of most ordinary "clip art") to offer desktop publishers the highest quality diskette-based electronic art on the market.

Packaged in volumes of 100 images each, ImageBase Art is categorized for quick and easy selection. Volumes are available in over 50 specific categories, and are also available in end-use packages such as ReportMaker and Newsletter-Maker.

ImageBase volumes are priced at U.S.\$145.00 each (for 100 separate images), and are available directly from the manufacturer.

Contact: Frank N. Whitehead, 4949 Genesta Avenue, Encino, California 91316, (818) 881-1997



Alloy Takes A New Approach to Networking

Multuser software is required when more than one user wants to access the same data at the same time. PC-PLUS from Alloy Computer Products is a group of products that provide a unique and cost attractive solution to running multuser software in a microcomputer environment.

The popular method of allowing users of different computers to access the same information is to "network" them together. This is achieved with interface boards that plug into the bus of each of the computers, wiring to connect the interface boards together, and a network operating system to keep track of and service the requests of the individual users. One of the computers, called the "host" or "server" has a large, fast hard disk drive that stores the data files to be accessed by the networked disk drive that stores the data files to be accessed by the networked users and their multi-user software. In many cases the host machine is dedicated to the tasks of the network operating system and cannot be used to run user applications.

Alloy has taken a slightly different approach to networking. All of the main components are the same but they are arranged differently. In the PC-PLUS system, each user on the network, instead of having their own computer, has only a terminal (no memory or processing power in the machine) usually consisting of a monitor and a keyboard. The rest of their computer is replaced by a "slave board". The slave board is similar to the interface board mentioned previously, in that it plugs into the host machine to connect the users to the common disk drive.

The slave boards, however, have memory and a processor dedicated to the attached terminal. A slave board is really just a motherboard-on-a-card. The fact that each user has their own processor and memory is just like having their own computer except it has been moved closer to the disk drive by placing it on the bus of the host machine.

This architecture is attractive for a number of reasons:

- 1) Because each user's slave board and therefore all of their processing power is right on the bus of the host, very fast disk access is achieved.
- 2) Security of the data is increased because none of the network users have the ability to remove data from the network, via floppy diskettes, unless they have physical access to the host machine. They will only be able to access data and programs they have authorized access to.
- 3) Users only have a keyboard and monitor on their desk freeing valuable desk space for working.

PC-PLUS is manufactured by Alloy Computer Products Inc. They are represented in the Vancouver area by Hart Software Support Ltd. The PC-Slave/16N, their 8088 based slave board, has a list price of \$1395 and the NTN, the network operating system is \$795. For more information, call Hart Software at 732-4278.

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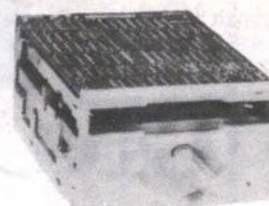
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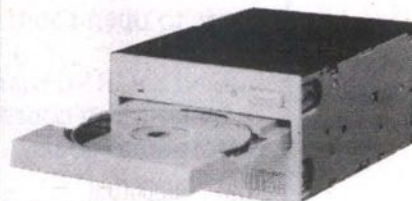
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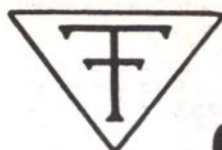


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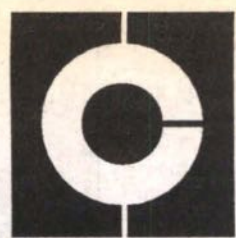
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NEWSBYTES

ATARI

ATARI is said to be working on a 68030-based version of its popular ST series. The as-yet-un-named machines will be announced in September. Also on the cards is a stripped down ST posing as a games cartridge machine. Expect the 68000-based cartridge system in January next year at a target price of \$199...

ATARI, Sunnyvale, Ca., has put off introducing its transputer-based workstation until "at least 1989." COMPUTER SYSTEMS NEWS reports the delay is due to a lack of a decent operating system. Sig Hartmann, Atari executive vice president, reportedly says the operating system, called Helios, will not be ready until October.

BC BYTES

CA Shows LAN version of ACCPAC V. 5
VANCOUVER (TCP) Computer Associates in conjunction with 3-Com and Cadence Computers, an ACCPAC software developer, demonstrated their new Version 5 Local Area Network Manager recently at Lifescan Medical Products. Computer Associates has received rave reviews on the user interface enhancements of their version 5 of ACCPAC released in January, but the LAN version had been slow to follow. Lifescan is a Johnson + Johnson-owned medical products company specializing in self testing kits for diabetics. The company estimates that with sales in the range of 5 - 50 million dollars, the system will meet their processing needs. The customized ACCPAC system included an order entry and inventory system with 10 PCs, 2 Macintoshes, 3 dot matrix printers, and a laser printer all networked to it off a single dedicated 386 based 3-Com server with 150 meg hard drive and a sophisticated tape backup subsystem.

The Vice President of Lifescan, John Hayes was pleased with the new system and the service and dedication he was receiving from Cadence. He said that their ACCPAC system is being jealously eyed by their US parent company which utilizes a mainframe based system.

Cadence Computers had approached Computer Associates to install the first version 5 LAN. Cadence in turn chose 3-Com because of performance factors. According to Cadence president Ian Glass, the 3-Com server "screams" compared to any other LAN systems currently available. The server also allows for considerable fine tuning which further enhances speed and user access times. Although the event was punctuated with much back patting by the three vendors involved, the hardware was impressive, and it did suggest that industrial strength Local Area Networks are becoming a reality. (Late Flash - July 18, 1988, CA has begun shipping the LANPak (\$399 for 4 users) and ACCPAC Plus Windowing System Manager (\$195))

B.C.'s Integra Big in POS Terminal Market
VANCOUVER (TCP) Starting with an investment of \$400 less than three years ago, Integra Systems Inc. of Vancouver is shipping multi-million dollar orders for their unique Point of Sale (POS) terminal. Integra recently held a coming out party for their first assembly line produced Sof-Term POS terminal. This new terminal is part of a 6 million dollar order from Alliance Systems Inc. of Santa Monica California. Alliance plans to use the 6500 terminals on order in the retail entertainment industry. The event was attended by such dignitaries as former Industrial Development Minister Grace McCarthy and Little Mountain MLA Doug Mowatt.

The terminal resembles many of those currently in use to debit Visa and Mastercard accounts. These terminals call up a central computer to check the buyers account while the buyer waits. Integra's unit is more sophisticated than most available. It will handle debit and credit card transactions, cheque authorization, detailed activity reporting, and inventory management as well as having local area networking capabilities.

The terminal has sufficient smarts to maintain a small inventory and receive updates from a host mainframe or PC. It contains 768K which allows it to be more programmable than conventional terminals. Integra has developed its own assembler programming language for the SofTerm. This language can be written directly, or is addressable from the "C" programming language. The terminal supports integrated LAN functions so a number of units can be linked and communicate with each

other. The unit is sleekly styled and its minimal footprint clears valuable counter space. A complete hardware system including SofTerm terminal with bar code reader and receipt printer can be purchased for as low as \$800.

Integra is listed on the VSE and the TSE (symbol ISI) and has been recently listed on NASDAQ in the U.S (symbol ISIIIF). The company projects sales of \$15 million this year. (Telephone: 604-733-1322)

CANADIAN NEWS

SuperCalc 5 Has Canadian Premiere

TORONTO (NB) — SuperCalc 5, the latest version of Computer Associates' electronic spreadsheet program for MS-DOS machines, made its first Canadian appearance at The Bottom Line Exhibition and Conference here July 13 and 14. The program's features include dynamic "hot-links" between multiple spreadsheets, debugging and auditing tools, presentation-quality graphics, a reporting function, the ability to read Lotus 1-2-3 files and execute 1-2-3 macros, and compatibility with Silverado, Computer Associates' database management add-in for spreadsheet programs. SuperCalc 5 works on all MS-DOS computers, a characteristic Computer Associates is promoting as an advantage over Microsoft's Excel, which requires an 80286 or 80386 microprocessor. But although SuperCalc 5 works on "even a 512K PC with dual 360K diskettes," the company says, it takes full advantage of top-of-the-line 80386 PCs.

Systemhouse Buys ComputerLand

(NB) — SHL Systemhouse Ltd.'s buyout offer for Computer Innovations Distribution Ltd., scheduled to close July 12, was a success with 92.2 per cent of Computer Innovations shares tendered to Systemhouse. That includes an option on shares held by BCE Inc. of Montreal, parent of Bell Canada and Northern Telecom. "It's a done dinner," said John Owens, spokesman for Systemhouse parent company Kinburn Corp., also of Ottawa. He added that the C\$3.60 a share offer has been extended to July 25 to allow remaining shareholders to offer their shares as well. "It's easier for the shareholders to tender their shares now" than to wait for Systemhouse to squeeze them out. Owens said. Systemhouse, a systems integrator and custom software house, says Computer Innovations will continue to operate as a separate entity with existing senior management. Computer Innovations runs just under 100 ComputerLand stores across Canada.

BEDFORD SOFTWARE LTD., Burnaby, B.C., made a profit of C\$553,000 in the year ended May 31, up from C\$153,000 a year earlier. Revenue rose to C\$5.3 million from C\$2 million.

IBM CANADA LTD., Markham, Ont., will eliminate some 300 manufacturing jobs at its Toronto plant over the next two years as part of a worldwide IBM consolidation, THE GLOBE AND MAIL reported, but the cuts will be balanced by growth at IBM Canada Laboratories.

Computer Services Welcome Free Trade

TORONTO (NB) — Free trade with the United States won't be a shock to Canada's computer service industry, according to the president of one of the country's largest computer service bureaus and chairman of the major professional association representing the industry. John Ricketts, president of Canada Systems Group Ltd. of Toronto, told a recent conference in Paris that the Canadian computer service industry has lived with Canada-U.S. free trade in all but name for many years and is used to competing with American firms. Ricketts was speaking to the World Computing Services Industry Congress in his capacity as chairman of the Canadian Association of Data and Professional Service Organizations (CADAPSO). "What will change under free trade is that the economies of both countries will be harmonized and that business will be integrated more than is the case right now," he said. "The benefit to the Canadian computer service industry lies in expanded opportunities for Canadian business generally."

NEWSBYTES by Wendy Woods (Western USA), Ken Maize (Eastern USA), Dana Blankenhorn (South & Midwest USA), Masayuki Miyazawa and Keizo Yamamoto (Japan), Grant Buckler (Canada), Steve Gold (UK) and Peter Vekinis (Europe)

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CD-ROM

650-MB Rewritable Drive Coming Soon
NEW YORK (NB) — Advanced Graphic Applications Inc. plans to hit the PC market with a 650-megabyte, 5.25-inch rewritable laser disk drive around November, according to President Alan Goldrich. Goldrich says the laser drive "will be a standard DOS device, or a standard OS/2 device," and will be priced initially at \$4,995. Goldrich says his firm has been working closely with Olympus and 3M on the project, with the support of Sony, Maxtor, and Fujitsu. The hardware will include the drive, the controller, and the device driver and software will include a utility that allows the user to partition the disks with no regard to the DOS limit of 32 megabytes. "We have rewritten sectors over 1.5 million times," Goldrich told NEWSBYTES, "and with no data loss or degradation. We have run Flight Simulator on it, run it on networks. There have been no problems." According to Goldrich, Advanced Graphic Applications has been in business since 1984 and currently employs 50, most of them engineers. "We are recognized as the premier driver and controller manufacturer in optical technology," he said.

CHIPS

RISC Road Becomes Riskier
BRUSSELS, BELGIUM (NB) — There are currently many players in the RISC (Reduced Instruction Set Computer) market. Currently there are AMD with the 29000, Motorola with the 88000, Fairchild's CLIPPER, IBM with the proprietary RT/PC processor, SUN with the SPARC, Intel with the 486 (not officially announced yet), National with the 532 (not really RISC), MIPS, and now Cypress Semiconductor with the SPARC. SPARC, which stands for Scalable Processor Architecture Reduced Computer, is a novel idea which offers a basic CPU cell, designed with .8 micron lines, and offers 20 MIPS from the 33MHz part. Designed to sell for \$700 in quantity, it is unique because the chip offers "windows registers" similar to the Z80 chip alternate register sets. At any point, the user can switch to another window and no saving of registers is necessary because registers are designed to overlap. Just this point is seen to be so important that everyone NEWSBYTES-EUROPE consulted was anxious to talk about it. That's because modern language compilers which are designed to have many modules, operate faster on the SPARC. Murray Freeman, Cypress marketing manager in Europe, explained further, "This chip is so well designed that we know of 286 emulators which run faster on the SPARC than they do on the real 286 chip." Although Cypress feels that the SPARC chip is the future, AMD also feels that its 29K chip is the future, and undoubtedly Motorola also feels that the 88000 is the future. We will just have to wait and see.

Chips Cheaper in Japan than U.S.
TOKYO (NB) — A dramatic difference in the price of semiconductors between Japan and other countries occurred immediately following the US/ Japan chip scandal. Wise buyers rushed to Japan to buy on the Japanese spot market, where chips were cheaper and plentiful. The price difference has persisted. Where once you could buy a chip for 100 yen, or 75 cents less than in the States, today that same chip is \$1.50 to \$2.25 cheaper. The reason for the cheaper prices is that many chip-makers in the U.S. reduced 256K DRAM production, then failed to make a smooth transition to 1 megabit DRAMs from 256k DRAMs.

Semiconductor Development in Taiwan
 As reported in NEWSBYTES- Japan last week, Seiko Epson plans to move its planning, design and software development to Taiwan. This week, Seiko has announced the establishment of a semiconductor design center in Taiwan. Major semiconductor makers, such as NEC, Toshiba and Fujitsu, have such centers in U.S. and Europe, but they only modify basic circuits made in Japan. Seiko Epson is giving its U.S. and Taiwan centers total control.

Top Chips: Motorola, Intel and Cypress?
SAN JOSE, Ca. (NB) — If T. J. Rodgers, Cypress Semiconductor's CEO has his way, the new Cypress microprocessor will be right up there in popularity with Motorola's and Intel's chips. Cypress has stepped into the microprocessor market with a 32-bit RISC-based chip said to perform at 20 million instructions per second, or a speed five times that of the Intel 80386. It's targeted at the Unix workstation market, specifically, those who would create Sun-compatible workstations, and a market in which Motorola, which supplies the

components for those machines, is already in control. Undaunted, Rodgers says his chips will sell on price and performance. "It's the most powerful monolithic microprocessor ever produced." He says his RISC chip will cost less than half that of Motorola's competing offering.

COMMODORE

How I Spent My Vacation: Selling Amigas
TORONTO (NB) — Commodore Business Machines will be sending more than 30 high school, college and university students to Amiga dealers' stores across Canada this summer to demonstrate the Amiga 500. Commodore says its Amiga Action Team program will run until August 31 and focus on retailers serving the home market. The students will work in designated territories across the country, where they will give demonstrations and training on the Amiga 500 and participate in special promotions and trade shows. All members of the Amiga Action Team have completed a comprehensive training program on the features, software, applications, operation, care and maintenance of the 500, according to Commodore. They've also had some instruction in presentation skills, promotions and merchandising.

COMPAQ

New Compaq Machines
TUSTIN, CA (NB) — When Compaq decided to go its own way in the PC market and leave the IBM-compatible umbrella, it was a question whether third parties would continue offering peripherals to upgrade the machines. Well, at least one will. CMS Enhancements Inc. of Tustin announced June 24 it will offer a family of 8 hard disk and tape drives for the newest Compaq Deskpro 386 machines, with drives of up to 320 megabytes which plug into the computers' SCSI (pronounced scuzzy) interface. Compaq is also rolling along on its expansion plans, having become the 900-pound gorilla of the Houston economy. The city, which is strapped financially, nevertheless came up with property tax abatements, road improvements and a \$253 million plan to turn FM 149 into an 8-lane freeway so that Compaq would keep its new jobs there. Compaq, meanwhile, is holding up announcing its plans while it studies greenmail offers from other cities.

Huge New Plant
HOUSTON (NB) — Compaq officially announced it will buy 85 acres of land near its present headquarters for expansion, and build 1.4 million of space there. It present has 1.3 million square feet of space on 149 acres. Plans call for three new manufacturing plants, four new office buildings and four parking decks on the site, which was purchased only after Houston officials coughed up \$150 million in various "incentives", including an 8-lane freeway direct to downtown. Compaq will eventually hire 4,000 more workers as a result of this action.

DESKTOP PUBLISHING & GRAPHICS

Seybold Hits Big Time with Big Names
SANTA MONICA, Ca (NB) — This may be it for Seybold Seminars and the Santa Clara Convention Center (September 14-17). While Seybold is happy with the Silicon Valley facility, the annual Desktop Publishing Conference that the group holds there has outgrown it. This year's affair will leave dozens of vendors hanging around out in the sun like so many of the prunes that once grew in there in abundance. Not only will the exhibit floor be packed but more than the usual number of new product announcements are expected. And, the stars will be out over the valley. The opening conference session alone is to feature Steve Jobs, John Warnock, Scott McNealy, Alan Kay, Paul Brainerd and Eddy Shah. We hear that Moscone may be next year's venue so enjoy that sun while you can and try not to wrinkle.

ZSOFT, Marietta, is preparing a faster version of its Publisher's Type Foundry which translates fonts under Microsoft Windows for use in applications like Aldus' Pagemaker. The program will include a data compression algorithm, and cost about \$500.

GENERAL

Electronic Sales \$125 Billion in 1st Quarter '88
WASHINGTON (NB) — According to the Electronics Industries Association, U.S. factory shipments of electronic equipment, components, and products totaled almost \$125 billion for the first six months of 1988. That figure excludes imports. EIA says this is a gain of about 16 percent over the

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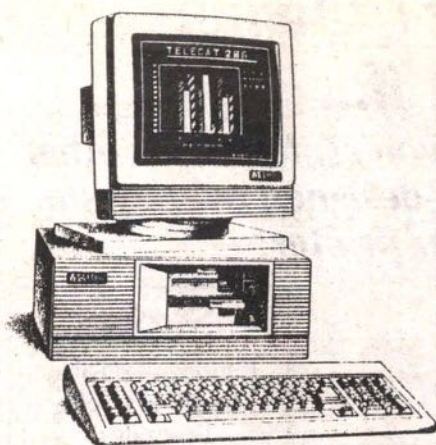
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first half of last year. The computers and industrial electronics sector registered \$41.3 billion of the total, up more than 20 percent over last year's \$34.3 billion, EIA says. Total employment in the electronic industries in June 1988 was about two million, up five percent over June of 1987.

AT&T, of New York, has announced a virtual hiring freeze and will begin reassigning employees to strengthen its computer and long-distance businesses. The reassignments will move 3,000 people to sales and marketing. AT&T continues to lose money in computers and has been pressed hard by competitors for its long distance business. The hiring freeze is on indefinitely.

U.S.-Made Computer Translates Languages
REDMOND, WA (NB) — Advanced Products & Technologies will deliver a computer called The Voice this fall. The machine, first announced in December, 1987, can handle simultaneous translations of English, French, German, Spanish and Italian. Chief executive Steve Rondel said The Voice can handle about 10,000 different sentences.

Unisys to Cooperate with Probe
BLUE BELL, Pa. (NB) — Unisys, one of several defense contractors being probed for procurement irregularities, says it will cooperate fully with an investigation into its billing practices for work done for the Army. The U.S. Attorney in Tucson, Ariz., is considering criminal charges against the giant computer company and two officials over alleged overbilling for work done at Fort Huachuca, Ariz. Unisys voluntarily disclosed the Fort Huachuca problem. Unisys said in a statement that "any mischarging which may have occurred did not exceed \$250,000." The company added it "intends to cooperate fully with the government in the completion of the investigation." In other Unisys news, the company has reported record second-quarter earnings, despite a decline in defense contracts. Unisys says earnings increased 34 percent to \$162.3 million for the quarter (78 cents per share) compared to \$121.2 million (62 cents per share) for the 1987 second quarter. Second quarter revenues were \$2.4 billion, compared with \$2.3 billion for the second quarter of last year.

Public FAX Machines Debut in California
SANTA CLARA, Ca. (NB) — Need to fax a document somewhere but you don't have a fax machine handy? A Santa Clara firm has the answer — public, credit card operated, fax machines located at airports, hotels, and other public areas. The machines combine facsimile capability with a standard voice telephone and operate similar to the system used by automatic teller machines — insert credit card, push a few buttons, and your transaction is done. "We paid a lot of attention to ease of use," A. Wayne Luke, vice president of sales and marketing, told NEWSBYTES. "The public doesn't want to fool around with something that looks like a computer."

The two big advantages to its fax booths are cost and privacy, he adds. A hotel recently charged Luke \$18 to send a 4-page facsimile document. The PayFax booths charge only \$8 for 10 minutes — usually more than enough to send four pages — and \$.80 for each additional minute. And at hotels an operator normally has to send the document for you — a big disadvantage if you're sending something private. These units are self-operated. FaxPlus says the first PayFax machines have been installed at four Bay Area hotels, including the Holiday Inn Golden Gateway in San Francisco and the Hotel Sofitel in Redwood City, California. By the end of the year, some 1,500 units are expected to be operating in 20 U.S. cities and 20,000 installed by the end of 1992. CONTACT: Carole Hoffarth, for FAXPLUS, 415/893-3000

Software Bad from US Military Contractors
PITTSBURGH (NB) — Lack of management methods and training in software engineering hampers defense contractors developing advanced programs, according to a study by Carnegie Mellon University. Military computer contracts lack a focused approach to software engineering, the report by the Defense Department's Software Engineering Institute at Carnegie Mellon concluded. The firms did not track software engineering projects adequately and lacked uniform standards for developing software or for estimating the size and cost of projects. "The bottom line is reduced efficiency, productivity, and quality during software development," said Tim Kasse of the institute. "None of us can manage software very well," Jack Ferguson of Hanscom Air Force Base in Massachusetts told the Associated Press.

IBM's Latest Line: A400 Mini-Computers
ATLANTA (NB) — As predicted in the June 21 edition of NEWSBYTES — UNITED KINGDOM,

IBM introduced a new line of minicomputers called the AS 400 Series on June 21. (AS, it turns out, stands for Application System.) Besides having more speed, storage, and power than the System 36 and System 38 machines they replace, the new machines also feature online service and support, the first full implementation of IBM's vaunted SAA standard of connectivity, and a new relationship with the people who re-sell IBM machines and write software for it. These Business Partners, as IBM now calls them, were kept informed throughout the design process of what IBM was doing, and 1,000 real applications were shown, working, in IBM demonstrations worldwide on the day of the announcement. Here's the low-down on all the new stuff: *A new, last-of-the-line System 36/5263, introduced as a low-end machine with 1-2 megabytes of main memory, 105-420 megabytes of disk storage, and other features. IBM admitted that "migrating" System 36 applications to the AS/400 is a little harder than migrating System 38 applications, so they offer this for the small and the timid. *The Models 10 and 20, each about the size of an office trash can, which plug into an ordinary 110 volt outlet, and feature internal memory of up to 16 megabytes, with up to 945 megabytes of disk storage; *The Models 30, 40, 50 and 60, mounted in racks like old mainframes, with components like processors, tape drives, memory, and communications systems you can mix and match as you please; and *OS/400, a new operating system which is backward compatible with old System 36 and 38 programs, and upward compatible through SAA (stands for Systems Application Architecture) with IBM PS/2s, PCs, and mainframes.

The announcement was made worldwide over a 200-node satellite TV hook-up beamed from New York to audiences across the U.S. (There were 2,000 onlookers in Atlanta, for instance, 1,700 in New York.) The satellite feed was followed by an hour of testimonials in each city. (In Atlanta a Model 20 was supposed to rise from the orchestra pit surrounded by theatrical smoke, but regional exec Tom Smith canned the smoke at the last minute.) That event was followed by free food and an afternoon of demonstrations at IBM field offices. (Atlanta's audience was brought to the top of the new 50-story IBM Tower, a mile from the Fox, where they saw dozens of local software outfits showing their best stuff, live and running, on AS/400s.) In addition, versions of the software are available in about 25 languages worldwide (like English, Japanese, Italian, not BASIC, Pascal, and C) and general deliveries worldwide begin in August. Prices, based on the model and peripherals you want, can run from \$20,000 to over \$1 million.

MEANING — This is IBM's last, and maybe best, chance to foist a proprietary architecture and all-controlling envelope around its customers. They're offering a 10% discount when you buy everything — hardware, software, printers, support, even computer paper — through IBM. The online education and online service (including online troubleshooting and software updates) will make the embrace very tempting to current System 36 and System 38 users. (One low, low lease bill every month for everything, IBM promised.) As for the rest of us, the Mac users, Unix users, and the great unwashed with fully-loaded Compaqs and LANs, this may prove an offer we can live without.

JAPAN

English-Japanese Translation from IBM Japan
TOKYO (NB) — IBM Japan has developed a program which translates English sentences into Japanese. The system for human assisted language translation (SHALT) claims its translation algorithm is 1.5-3 times more efficient than human translators' hands. SHALT includes an English analysis feature which clarifies the part of grammar for each word, an English-Japanese transfer feature which transfers the result of analyzed English into other English expressions, as well as into a half expression of Japanese, and a Japanese sentence generation feature. IBM Japan has begun translating its own manuals with the product. The first, "IBM 3174 Control Unit Guide" was published in the middle of this month. IBM Japan is aiming to release the SHALT in the Japanese market after further improvements are made.

Teletel Lands In Japan
TOKYO (NB) — France's Teletel, the most popular videotex system in the world, is headed for Japan. France's Telecom is currently working with Philips Japan on the project. Telecom has obtained sales licences for its terminal machines, called Minitels, in Japan. They could ship as early as this fall. The Minitel is expected to carry a price

of under 50,000 yen or \$380, far lower than NTT's price for its CAPTAIN videotex terminals. Videotex is an information search service using telephone lines. By calling up the computer center, you can search menus for news, shopping, stock market quotes, and weather reports.

Software Companies From Japan
TOKYO (NB) — Japanese software development companies have been establishing bases in Europe and U.S.A. at an unprecedented rate.

TSD, Tokyo, will establish a corporate office in the U.S. and the Philippines. Los Angeles-based TSD America will develop application software for Japanese companies entering the U.S. market. Philippine TSD will support software development for the companies with which TSD has contracted. Manila-based TSD will be set up in August, with joint investment by Paul Akino, step brother of Philippine President Aquino and director of Philippine Software Associates. TSD will entrust 20 percent of the software development orders received in Japan, to Philippine TSD within five years.

Meanwhile, Iness will establish corporate offices in the U.S. by the end of this year. Software Research Associates (SRA) will set up SRA Europe in London this October. Toyo Information System (TIS) sets up TISUSA in Los Angeles at the beginning of this month.

Futuristic Communications Project Launched
TOKYO (NB) — The Ministry of Posts and Telecommunications (MPT) has released a report which details a 21st Century Universal & Intelligent Communications Network (UICN), a system which marries both artificial intelligence and telecommunications technology.

The UICN is expected to perform, among other tasks, automatic language translation between speakers on the telephone, and will have new data transfer methods in which the caller need not know the protocol of a remote receiving station. The UICN project is not just pie-in-the-sky thinking. The report will be the basis of a meeting by year's end between researchers who will be involved in implementing the concept.

Voice Recognition Technology Develops
TOKYO (NB) — Japan's telecom giant NTT has developed a large-scale integrated circuit (LSI), which can distinguish between a myriad of different voices. The chip makes it possible for a voice recognition board to be one fourth the size of current peripherals, enabling the board to be installed in a PC.

The LSI is expected to bring a version of NTT's ANSWER system to end-users. In use by banks, ANSWER allows customers to deposit or withdraw cash from their checking or savings accounts through a telephone call and checks their voice against digitized voice data saved in its database.

LOCAL AREA NETWORKS

DCA Announces a Fiber LAN
ALPHARETTA, GA (NB) — Digital Communications Associates announced a local area network (LAN) using optical fibers instead of coaxial cable. The 10-Net Fiber Optic LAN uses software developed by Dayton, Ohio-based subsidiary 10-Net Communications, formerly Fox Research, and can connect several hundred computers together without repeaters. The cost will be \$1,300 per node, including software, plus about \$3,000 for the main hub.

DCA also announced two LAN gateways, IRMALAN 802.2 and IRLMALAN SDLC Gateway 2, which let users of such LANs access data in mainframe systems. The 802.2 product lets non-IBM or Netbios compatible LANs access IBM mainframes using token-ring technology. The SDLC Gateway 2 product emulates IBM terminals so the LAN appears to be directly connected to it. New software and enhancements for the IRLMAX and IRLMALAN lines was also announced.

Wang Rolls Out PC Security Device
LOWELL, Mass. (NB) — Wang Laboratories has unveiled a security device for the Wang PC 200/300 series of AT clones, and for PCs in stand-alone, networked, and workstation environments. Through a licensing deal with Micronyx, Inc., of Richardson, Texas, the MicroControl product uses an advanced security kernel, electronic tokens, and file encryption techniques. The security kernel is an addition to the operation system. According to Wang, it enables MicroControl to protect itself from attempts to tamper or alter its controls. MicroControl is \$1,200 and is available immediately.

Newbridge Multiplexer Handles 7 RS-232s
KANATA, Ont. (NB) — Newbridge Networks Corp. has announced the 1070 Mainstreet Multid-

river, a statistical multiplexer that handles data distribution through seven asynchronous RS-232 channels. Newbridge says the 1070 is a cost-effective way of distributing RS-232 data and is simple to install and maintain.

MACINTOSH

Symantec's 5 New Products For The Mac
BELMONT, Ca. (NB) — Confirming its commitment to the Macintosh market, Symantec has released five new software products, including an upgraded desktop presentation product. MORE II, InBox 3.0, THINK's Lightspeed C3.0, THINK's Lightspeed Pascal 2.0, and Just Enough Pascal were announced.

MORE II, considered the centerpiece of Symantec's Macintosh offerings, is a complete planning, writing, and presentation software system featuring advanced outlining, a word processor, full drawing capability, and the ability to create customized color overheads and 35mm slides. At the news conference, Symantec announced that slide designs created with MORE II can be sent via modem to MAGICorp of Elmsford, New York, which will deliver slides via Airborne Express, within 24 hours of a call, at \$15 each. Available in the fall MORE II is expected to cost \$395 or \$89 for current MORE owners. It is also available to PowerPoint, Criticket Presents, and ReadySetShow owners for \$89 in a limited time offer.

Macintosh Today Tabloid Folds
SAN FRANCISCO (NB) — As expected, PCW Communications has pulled the plug on its fledgling Macintosh weekly trade publication MACINTOSH TODAY. President David Bunnell, in the final July 18 issue, tells readers the end as come "at least as you've come to know it." He praises the hard-working and dedicated staff, then explains the bottom line. "We just didn't get the response from advertisers we needed. Our parent company, IDG Communications, decided suddenly — and very recently — not to continue investing in the newspaper." He says he hopes for a relaunch of the publication, possibly online. In the meantime, most of the staffers are expected to be switched to the other PCW publications PUBLISH, MACWORLD, and PC WORLD.

Apple Shines in Latest Quarter Earnings
CUPERTINO, Ca. (NB) — Continuing its stellar performance, Apple Computer has announced that its latest quarter produced a 71 percent increase in earnings to \$91.3 million, compared to \$53.5 million one year ago. Sales were up 56 percent to \$993.1 million. The firm attributes the great figures to "good progress in the business markets," according to a statement from Del Yocam, Apple's chief operating officer. Especially encouraging were strong sales of Apple's high-end machine, the Macintosh II. Bruce Lupatkin of Hambrecht & Quist, a market research firm, says some 50,000 Macintosh IIs were sold in the last quarter compared to 35,000 in the previous quarter. He further remarked that the most surprising aspect of Apple's most recent report is strong sales in Europe with international sales accounting for 38 percent of total sales.

Claris Buys Filemaker - Top Selling Database
MOUNTAIN VIEW, Ca. (NB) — In its second acquisition in as many months, Claris, the Apple Computer software spin-off, has purchased Nashoba Systems of Foster City, Ca., maker of FileMaker, the largest-selling database package for the Macintosh. The acquisition follows Claris' purchase of StyleWare of Houston, and provides Claris with a more complete line of Macintosh software products.

Under terms of the deal, which reportedly cost Apple \$7 million, Nashoba's programmers will remain in Massachusetts while its Foster City operation will be folded into Claris' Mountain View headquarters.

APPLE COMPUTER, Cupertino, Ca., began shipping its AppleFax Modem, \$699. Operation of the modem with a Macintosh actually requires use of a conventional modem. The fax machine comes with software which allows fax calls to be time-delayed and permits printing to a LaserWriter printer.

THE EXPLORATORIUM, San Francisco, a hands-on science museum, has received \$170,000 worth of Apple computers — 36 computers in all including 5 Macintosh IIs, a fax machine, and 31 SEs — in a donation from APPLE COMPUTER. The machines will be used to produce exhibits, graphics, and the Exploratorium's magazines, Ron Hipschman of The Exploratorium, told NEWSBYTES.

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☐ 5) \$1-5 million ☐ 6) \$5 million +
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11) How old are you?

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☐ 4) 45-54 ☐ 5) 55-64 ☐ 6) over 65

12) What is your highest level of education?

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13) What is your household income?

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New Mag for Mac Dealers

MANHASSET, N.Y. (NB) — No sooner has one Macintosh trade publication bit the dust, MACINTOSH TODAY, than another has taken its place. CMP Publications is launching a biweekly tabloid aimed at dealers of Apple Macintosh computers and Macintosh developers. But unlike the deceased MACINTOSH TODAY, which boasted a circulation of 200,000, this four-color magazine will have a controlled circulation of 24,000. CMP has been on an aggressive binge of new launches of late, unveiling "Communications Week International," "Unix Today," and "Long Island Monthly" in the last quarter. Altogether, the company publishes 15 magazines. The new Macmagazine, called "MACINTOSH NEWS," will appear on September 26.

H-P Files Counter-Suit Against Apple

PALO ALTO, CA (NB) — Many people who've seen the papers believe that Hewlett-Packard, not Microsoft, is the real target of Apple's famed "look and feel" lawsuit aimed at protecting the Apple Macintosh user interface. Were all H-P computers to become Mac-like, Apple might lose its captive audience. And they are becoming that way, thanks to "NewWave", Hewlett-Packard's new operating environment which is the target of the suit.

This week H-P countersued Apple, charging unfair business practices and violations of the Sherman Anti-Trust Act. The company, making its formal response to Apple's April 17 suit, denied all the allegations, asking that the court invalidate Apple's copyrights. Basically, H-P charges that Apple does not hold valid copyrights for its visual displays and images because it did not originate them. In fact, they were the product of research at Xerox' Palo Alto Research Center (PARC) first shown as Small Talk.

H-P also charged that Apple manipulated NewWave in samples it gave the court and the press. "NewWave represents the most serious threat to Apple's monopoly and the most promising means of introducing effective and vigorous competition in this market," the countersuit concluded. Apple's response: let a court decide.

Apple Executives Sell Large Blocks of Stock

CUPERTINO, CA (NB) — Many investors watch the investments of corporate insiders closely. They know the outlook of their companies best, and they have to report their purchases and sales to the SEC. When insiders buy, outsiders figure they know something good is happening. When insiders sell, outsiders figure bad news is coming.

Recently, at Apple, insiders sold. In a big way. Del Yocam, executive vice president and chief operating officer, unloaded 100,000 shares, leaving himself with just 2,000. Mike Spindler, senior vice president for international sales and marketing, sold all his 20,000 shares. Jean-Louis Gasse, senior vice president for research and marketing, sold his holdings as well, and Al Eisenstadt, senior vice president and secretary, sold 30,000 shares, roughly one-fourth of his holdings.

Analysts, however, said not to worry. Apple executives usually sell stock in the late spring, based on the timing of their stock option plans. Besides, with Yocam getting his Apple stock at \$7.75 per share, the sales left him with a real profit of \$3.7 million.

NEW IMAGE TECHNOLOGY, INC., Lanham, Md., has ended production of Magic, a video digitizer for Macintosh computers. Magic has been in production since 1984. New Image says it will honor the full warranties on all systems.

Handy Image Scanner For Macintosh

TOKYO (NB) — Tokyo-based software venture Kowa Joho Giken has developed a small scanner for Macintosh SE, II, and PLUS. The scanner has a data transfer speed of 100 megabytes per second, 30 times faster than other scanners. As soon as an object is traced by the scanner, the image appears on the screen. The scanner has a reading area of 105mm x 300mm. It can take photographs into Hypercard, too. The price, including adaptor, connector, and software, is 78,000 yen or \$600.

Mac Gets More Beef From Ashton-Tate

TORRANCE, Ca. (NB) — While the Macintosh market may not be big enough to support two weekly Macintosh-specific tabloids, it's clearly big enough for Ashton-Tate to take it seriously. Ashton-Tate has established a new Macintosh Software Division which will em-

ploy up to 100 people in software development, sales, and marketing. Just named to head up the new division is Terence Garnett, a venture capitalist. Edward Esber, Ashton-Tate chairman, had been heading the division since its founding in February. Fullwrite Professional, acquired from Ann Arbor Softworks, is currently Ashton-Tate's flagship Macintosh product.

Meanwhile, Ashton-Tate is offering a special deal to those well-heeled enough to attend its September developer's conference. Sign up now (registration \$795) and receive any of the following: dBase IV Developer's Edition, Framework III, or two Macintosh products. The conference is slated for September 13 through 16 at the Century Plaza Hotel in Los Angeles.

Apple To Replace Bugs in System Software

CUPERTINO, Ca. (NB) — Within two months of its release, version 6.0 of the Macintosh system software is being revised. Numerous complaints of bugs have prompted Apple Computer to promise an update, version 6.01, by the end of July, just in time for the ship date of the new Imagewriter LQ printer driver.

Users complained that version 6.0 had glaring problems with sound files, script editing, color palette files, and MultiFinder. Consequently, according to Apple spokeswoman Cynthia Macon, there are a total of 19 patches in the new system software.

APPLE COMPUTER, Cupertino, Ca., is expected to announce a new flatbed optical scanner, a 60 megabyte tape drive, a new monochrome monitor, and a high resolution monochrome video adapter as early as August at the Boston MacWorld Expo. Also in the wings are a new version of HyperCard, and a Mac SE with 2 megabytes of memory and a 40 megabyte internal hard drive.

Supermac Sells to Venture Capital Group

MOUNTAIN VIEW, Ca. (NB) — Red ink-bleeding Scientific Micro Systems may finally get some fiscal relief; the firm has signed a letter of intent to sell its coveted SuperMac Technology division to the Sigma Partners venture capital firm of San Jose. The decision to sell to Sigma culminates months of speculation about the fate of the profitable Scientific Micro Systems division, which has been courted by a wide range of suitors, from former employees to major corporations. The purchase price of SuperMac will be determined at the date of sale, expected to be August 1. Scientific Micro spokeswoman Melanie McNulty told NEWSBYTES. Interestingly enough, SMS "does not expect to realize any significant gain or loss from the sale," she adds, since the purchase price will be based on the net book value of the assets of SuperMac minus certain liabilities. SuperMac makes large screen monitors and hard disk drives for the Macintosh.

Blyth Fires California Staff Moves to NYC

SAN MATEO, Ca. (NB) — Blyth Software, famous for its Omnis database software, has instituted a major reorganization aimed at cutting costs. The firm's acting president has fired Blyth's California programming staff of five and has closed down its entire U.S. software development team in order to facilitate research and development back in the U.K. Paul Wright, chairman of Blyth Software's parent company, based in London, England, told NEWSBYTES "the fiscal year has been disappointing" and major changes have been necessary. For one, the U.S. programming team, he says, was competing with Blyth's U.K. programmers and they were considered no longer necessary. Secondly, Blyth intends to purchase Corporate Class Software, a New York firm which sells a high level financial analysis reporting package to Fortune 1000 firms. The sale, which will require a substantial but undisclosed amount of resources from Blyth, is due to be culminated at the end of July. At that time, Blyth is also to move its U.S. headquarters from San Mateo to Manhattan where Corporate Class is located. Wright told NEWSBYTES one of the biggest advantages in buying Corporate Class will be to acquire its management team, a highly successful group of people who will take over the reins at Blyth. Wright added that the San Mateo office will become a fully staffed support and Western regional sales office.

Breakthrough Math Program For Mac

SANTA CLARA, Ca. (NB) — "When calculators came out, arithmetic became very easy. We built Mathematica to make all kinds of mathematics that easy," said the developer of a revolutionary new math product, Stephen Wolfram, flanked by enthusiastic representatives of Apple, IBM, Autodesk, Sun Microsystems, and NeXT. The celebration was about Mathematica, a program currently

available for the Macintosh, which can perform virtually every calculation in a fraction of the time it would take to perform it by hand. Mathematica can simultaneously produce 2-dimensional or 3-dimensional graphs, and includes a language that can be customized to create new applications based on textbook or teaching models. Everyone is raving about it. For instance, Apple's Larry Tesler, vice president of advanced technology, says of Mathematica, "It will really revolutionize the way people do math."

Steve Jobs, Apple co-founder and currently president of NeXT, is the first to promise to bundle the product free with all the workstations he sells, although Jobs refused to discuss when his computer will be introduced. Autodesk promises to create a version that will run on IBM's PS/2 line. The program will also become the foundation of new engineering applications from Autodesk. "It's the most incredible tool we've ever seen," gasped Autodesk's Eric Lyons, director of technology. In addition, Sun Microsystems, Ardent Computer, Stellar Computer, and Silicon Graphics announced plans to adapt Mathematica to their machines. Mathematica, marketed by Wolfram Research of Champaign, Illinois, is the brainchild of acknowledged genius Stephen Wolfram, the firm's president. He was the youngest doctorate recipient from Caltech, receiving his distinction in physics at the tender age of 20. He is currently a professor at the University of Illinois. Mathematica is currently available for the Macintosh SE for \$495 and the Macintosh II for \$795.

NeXT Setbacks

PALO ALTO, Ca. (NB) — Think you can market a state-of-the-art campus workstation created by a team headed by one of the industry's wunderkinds? There are now openings in Boston and Pittsburgh, two cities where NeXT Inc. is establishing sales offices. Advertisements for sales personnel have been posted in those cities' local papers, indicating the forecasts of a July release date for NeXT's first computer are most likely on target. The date of the introduction is also said to be in perfect timing for fall purchasing decisions by universities and colleges.

Only one factor could delay the introduction of the NeXT machines, according to published reports, and that is a possible dispute between Apple Computer and NeXT over copyrights. The attorneys from both sides are still said to be haggling over details regarding the similarity of each firm's offerings.

Meanwhile, Jobs got something of a blow from one of his biggest fans. Carnegie Mellon University, an investor in NeXT, announced that it will develop versions of the Mach operating system for the Macintosh II. That's the operating system on which the NeXT workstation is rumored to be running, and if it's ported to the Macintosh, the NeXT machine will lose some of its individuality. To make matters worse, the University announced that the preferred machines for incoming students this fall will not be from the Palo Alto company, but from Apple and IBM — the Macintosh and the PS/2 line.

JASMINE TECHNOLOGIES, San Francisco, has lowered the prices and upgraded its hard disk drives. Capacities now range from 45MB to 140MB and are priced from \$799 to \$1,499.

PC NEWS

New DOS 4.0 Finally Released

REDMOND, Wa. (NB) — Microsoft has released an update of the world's most popular operating system, MS-DOS Version 4.0. The new operating system boasts several improvements over its predecessors. First, it includes support for hard disk files greater than 32 megabytes, so the user is not required to divide large hard disk drives into smaller partitions. Also new is support for the expanded memory specification which allows the computer to access more than 640K at one time. There's also a DOS Shell, a file directory management system for low-end personal computers that allows users to visually organize their hard disk files with pull-down menus. This feature may have been the reason for Microsoft's delay in introducing the product on the market. Sources told NEWSBYTES-EUROPE that the Apple/Microsoft "look and feel" lawsuit required the Washington-based firm to take a hard, second look at its visual copyright.

Analysts say IBM did most of the work on the new DOS and licensed it back to Microsoft, both out of respect for the software company's previous work on DOS, and out of concern that the public not perceive IBM as abandoning its newer operating system, OS/2.

MS-DOS Version 4.0 is being released to hardware manufacturers first but is expected to be available to end-users for \$95 no later than October.

PETER NORTON COMPUTING, Santa Monica, Ca., has grown from earning \$500,000 a year in 1983 to making \$11.2 million in 1987. It ranks among the 15 fastest-growing software companies, according to SOFTLETTER, and is now the 32nd largest independent U.S. software company. Journalists got a packet of tomato seeds in the mail with this announcement, and it was explained this way, "A good gardener always plans for the future and next year's crop. While you're waiting for the sprouts to break ground, be on the lookout for an exciting new venture that we will announce shortly..." Hummm....

SOFTWARE PUBLISHING CORPORATION, Mountain View, Ca., is doing quite well, thank you, with earnings of \$3.86 million, a 338 percent increase over 1987 figures. SP's Chief Financial Officer claims the increase comes from corporate accounts, which make up 60 percent of the firm's revenues now. "This is a significant departure from our past focus on smaller customers," says Jim Heffernan.

Lotus's Marketing Efforts Boost 1st PIM Maker
SAN JOSE, Ca. (NB) — To say the least, it hasn't been easy for a tiny software start-up to get the world to look at its new kind of software, but Lotus' Agenda, which is now shipping, may help matters. Valor Software, after researching the new software category for two years, was the first on the market with a "personal information manager" or PIM, called Info-XL, back in February. It's got five windows: outline processor, a file manager, word processing area, scheduler, and calendar. They all work together to presumably sort through and organize one's life. Info-XL sells for only \$295 compared to the higher price tag for competing Grandview from Symantec, and Agenda from Lotus.

But regardless of the program's uniqueness and price tag, Valor had a "tremendous educational burden," Gary Jose, VP of marketing told NEWSBYTES, in bringing news of this tool "that can dramatically increase productivity" to the public. A white paper was published by Valor's President Steve Sando, explaining the new category to software resellers and editors, which is now in its second printing.

But Valor's efforts at publicity are now dwarfed by Lotus' planned \$6 million advertising and educational campaign to promote its own PIM, Agenda, says Jose. The mood was upbeat when Lotus announced shipment of Agenda, because "Lotus' market presence will significantly help in educating PC users about this new category." Info-XL runs on any MS-DOS machine with at least 384k and MS-DOS 2.0 or higher. The package is sold at Egghead software stores.

U.S. ComputerLand Files To Go Public

HAYWARD, Ca. (NB) — ComputerLand, seeking to raise \$109.3 million, has filed with the Securities and Exchange Commission to offer 31.4 percent of the company for public stock sale. The prospectus asks that the initial public offering of 3.4 million shares be priced at between \$16 and \$19 a share — a fairly high price according to most analysts, who point to the fact that such a price is higher than Businessland's, which is growing at a faster rate than ComputerLand.

The prospectus notes that ComputerLand sold \$1.7 billion in goods during its last fiscal year and posted sales of \$71 billion for the first eight months of this year. Profit reached \$5.6 million last year. The public offering is being managed by Salomon Brothers, Merrill Lynch Capital Markets and San Francisco-based Volpe & Covington.

Symphony Sales Push Lotus Earnings

CAMBRIDGE, Mass. (NB) — Strong sales of Symphony, its integrated software package, led Lotus Development Corp. to \$17.3 million (38 cents per share) in earnings for the second quarter on sales of \$122 million. That compares to profits of \$16.3 million (36 cents per share) on sales of \$94 million for the second quarter of 1987. "Business was boosted by an outstanding quarter for Symphony, another solid performance by 1-2-3, and a strong quarter of international sales," said Jim Manzi, Lotus president.

Goldman Sachs & Co. analyst Richard Sherlund estimates that Lotus sold 285,000 units of 1-2-3 in the quarter, down a bit from the record first quarter, but still a solid performance. The good sales for 1-2-3 indicate that Borland's Quattro and Microsoft's Excell aren't taking market share from the venerable 1-2-3.

Version 3.0 of Lotus 123 Real Soon Now

PASADENA, Ca. (NB) — Lotus lovers were out in full force at Cal Tech last week for a preview of 3.0. After making a presentation of the next version of 1-2-3, product manager Chris Randall assured those assembled that the product would be delivered, as promised, in the fourth quarter. Randall dismissed rumors that the latest implementation presently requires over 640KB to run under DOS and that developers in Cambridge are having fits getting it to fit. Instead, he maintained that the new version would not only offer spiffy new features like multiple levels but would perform faster and in less memory than previous versions.

ZSOFT, Mediagenic (Activision) Merging
MARIETTA, GA (NB) — ZSoft chairman Mark Zachmann, in an exclusive interview with NEWSBYTES, admits his firm's merger into Mediagenic, formerly Activision, is not yet finalized. Lawyers still are going over the papers, he said, and until then he can have nothing formally to say about the firm's direction. But he did confirm that the present direction of Mediagenic is more in line with ZSoft's business, PC applications like PC Paintbrush, than its former life as Activision, the games company. Once the merger is final, expect ZSoft to take control of Mediagenic's PC applications development, and look for Zachmann to have a bigger role in setting the company's direction.

CE SOFTWARE, Des Moines, IA, is creating a version of its QuickMail package, written for the Macintosh, for use on IBM machines. It will run under MS-DOS.

MSA, Atlanta, has weathered a takeover attempt from Garden City, NY-based COMPUTER ASSOCIATES INC. For now, CAI's Anthony Wang said his firm was rebuffed at every turn by MSA management, and acknowledged the board has support from shareholders. MSA stock dropped to \$9.12 per share in the wake of CAI's announcement. CAI had offered \$11.50 per share.

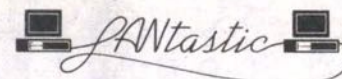
Lotus Ships AGENDA, New Type of Program
CAMBRIDGE, Mass. (NB) — Lotus Development Corp. has begun shipping Agenda, its new personal information manager that is supposed to bring the HyperCard concept that is a success on Apply computers to the world of IBM PCs and clones. The product, developed primarily by Lotus founder Mitch Kapor, has been in development for two and a half years. Lotus is devoting great care to the product, including budgeting \$6 million for the launch. Agenda runs under DOS 2.0 or higher, and requires 640K of RAM and a hard disk drive. The suggested retail price is \$395 and the product is available immediately. How well will Agenda do? Opinion is divided. The "Wall Street Journal" quotes Stewart Alsop, editor of P.C. Letter, predicting that Agenda will be "another very talked about program that falls flat on its face" because it can't multitask. On the other hand, Esther Dyson, editor of Release 1.0, told the newspaper that Agenda is "fundamentally new and different. It's tremendously exciting."

REGIS MCKENNA, himself, has penned another book, "Who's Afraid of Big Blue? How Companies Can Challenge IBM — and Win." His first blockbuster was "The Regis Touch: New Marketing Strategies for Uncertain Times." The new book tells many tales of success gleaned from McKenna's walks through the halls of Apple, Compaq, and other firms who have taken on IBM and won. The book will be priced at \$17.95 when it is released this fall.

Yellow Pages on Your Hard Disk

GA (NB) — John Rapp has been compiling and selling databases for almost 10 years now, but until recently he never considered selling databases for PCs. What changed his mind was a study he did last fall showing that 70% of PC users in business now have hard drives. So Rapp's Digital Publications Inc. is now trying to, as he told NEWSBYTES, "do to this industry what Borland did with compilers." He's offering customized mailing lists, organized by SIC code, at just \$100 per 720K floppy disk. "Our database is biased toward more established firms — it doesn't have pizza places," he says. CD-ROM versions of his databases, he says, will be available once the players come down to \$500 and mastering costs go lower than their present \$2,000 per disk.

Rapp also has some interesting ideas on how to gather publicity. He's sending computer writers copies of his database of computer magazines, on floppies. It has 1,276 listings, all in an ASCII file



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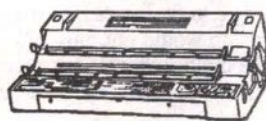
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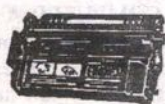
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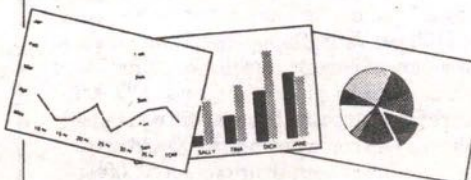
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Asians Crank Up Heat on PC Production

TOKYO (NB) — The newly industrialized economies of Asia are becoming the world's largest base of PC production, not only manufacturing other companies' products, but building new firms and establishing their own brand names.

In Taiwan, PC production is estimated to be 2 million units per year, a number which far exceeds the output of Japan. And Taiwan Acer plans to be the first in the world with an IBM PS/2 compatible machine. Closely on Acer's heels are two other Taiwan computer firms, Auto Computer and Copan, which also have PS/2 compatibles coming off their assembly lines. So far the big selling point to Taiwan-made PCs is their low price, and there is no indication that prices will increase. In fact, the aggressiveness of the Asian computer industry is beginning to worry both Japanese and US firms

OS/2 PS/2

OS/2 Extended Edition Arrives, PS/2 Sales Slow RYE BROOK, N.Y. (NB) — OS/2 Extended Edition 1.0 will be available July 29, according to International Business Machines Corp. The new operating system for the PS/2 line of personal computers is OS/2 Standard Edition with the addition of a database manager and a communications package that includes terminal emulation. Extended Edition 1.0 is \$795, and the upgrade for Standard Edition users is \$645. IBM says it will start shipping Extended Edition 1.1, which features the Presentation Manager graphical interface, in November. Upgrades from Extended Edition 1.0 to 1.1 will be (is this really IBM talking?) free.

According to IMS America Computer Markets Division, only the top-of-the-line IBM PS/2 Model 80 saw sales grow during the first quarter of 1988. The rest of the PS/2 line of personal computers from International Business Machines Corp. saw sales declines in dollars and units. According to IMS, the Model 80 gained 41 percent in dollars and 47 percent in units sold over the October-December 1987 quarter. The IMS retail audit found total PS/2 sales down 24 percent in dollars and 32 percent in units sold for the quarter. The low-end Model 25 was down 58 percent in units and dollars, the Model 30 down 38 percent in both, the Model 50 down 15 percent in dollars and 14 percent in units sold, and the Model 60 down 22 percent in dollars, 18 percent in units. Now we can stop wondering why IBM decided to take trade-ins on PS/2s.

November's Comdex Fall in the US. Watch this space...

IBM Armonk, N.Y., saw profits fall 18 percent in the second quarter on a six percent increase in revenue. The profit decline was a function of the \$600 million writeoff IBM took as part of its recent restructuring. Without the writeoff, earnings would have risen 12.7 percent. Profits fell to \$964 million (\$1.63 per share) from \$1.18 billion (\$1.95 per share) for the second quarter of 1987. Revenue rose to \$13.6 billion from \$12.8 billion.

IBM Cuts Job Rolls

BOCA ROTON, FL (NB) — In its drive to cut costs and its payrolls, IBM is moving the glamor out of its Boca Roton, FL facility, the original home of the IBM PC. Manufacturing of the PS/2 line is being shifted from Boca to IBM's plant in Research Triangle Park, NC, and the Boca plant is being closed. The move will reduce IBM's Boca staff from 7,100 to 5,500. To maintain IBM's history of no layoffs, all displaced Boca workers will be offered assignments elsewhere, but most aren't expected to take them. To further make it an offer they can't refuse, IBM will give those who leave 2 years' salary plus \$25,000, along with medical and dental benefits for two years, help in finding a new job, and up to \$2,500 in retraining expenses. That's not all. ROLM's PBX manufacturing is being moved from the division's own plants to an IBM plant in San Jose. ROLM operations in Austin, TX are also being combined with IBM operations there. Manufacturing in Tucson, AZ will also be phased out and moved to San Jose, Charlotte, NC and Poughkeepsie, NY. The firm's Toronto works will get out of manufacturing and into software development, and repair will be centralized in Brooklyn, NY. Staff will also be cut at headquarters. Analysts consider all these moves welcome and overdue. IBM has shrewdly cut plants in high-cost areas, like Boca, and cut staffing in sites popular with IBM employees, where Boca again qualifies. Workers who decide to stay with the company will mostly be moved into sales positions.

IBM Reorganizes, Consolidates

ARMONK, N.Y. (NB) — International Business Machines Corp. has announced a \$600 million slim-down program that will further consolidate operations and trim the computer giant's payroll by 3,000 to 4,000 employees. True to tradition, nobody will be laid off at Big Blue, but the company will offer early retirement and financial incentives to resign. IBM says the restructuring will cost about \$600 million, to be charged off against second-quarter earnings. Wall Street analysts praised the IBM move as a way to restore some zip to the company's earnings, which have been sluggish for the past couple of years. Explaining the reorganization, Terry Lautenbach, who became responsible for most of IBM's operations in January, said, "Our U.S. volumes of business have been somewhat less than we expected, though we are still planning for growth." Here are the basics of the reorganization:

- * All manufacturing operations at Boca Raton, Fla., will be phased out, and all PS/2 manufacturing will shift to Research Triangle Park, N.C., where much of the PS/2 manufacturing takes place.
- * Manufacturing at the Tucson, Ariz., plant will move to San Jose, Calif., Charlotte, N.C., and Poughkeepsie, N.Y. The Tucson plant makes storage products.
- * ROLM's telecommunications plant in Santa Clara will close, with production shifting to San Jose. The ROLM operations in Austin, Texas, will be consolidated with IBM's main site in Austin.
- * Charlotte and Austin will take over some assembly work done in Toronto. Memory cards and power systems will still be made in Toronto, and the program development responsibilities of the Toronto laboratory will increase.
- * The Brooklyn facility will serve as a diagnostic center, taking over work done at locations across the country. Assembly operations in Brooklyn will move to Poughkeepsie.
- * The Corporate, U.S. Marketing & Services Group, and the Americas Group headquarters staffs in Westchester County, N.Y., and elsewhere will also be reduced.

TELECOMMUNICATIONS

DUN & BRADSTREET CREDIT SERVICES of Murray Hill, N.J., has unveiled a service that will allow computer users to receive five-year financial assessments of U.S. companies. Called Duns ForeSight, the service compares a company's financial and balance sheet data with information in the D&B data base of 9 million public and private companies.

UNIX

Next, IBM, Adobe, Trade Technology

PALO ALTO, Ca. (NB) — Rumors are rampant that IBM, Steve Jobs' NeXT, and Adobe Systems are talking turkey regarding an exchange of technology. Industry sources say IBM wants to license Display PostScript from Adobe for use in its own computers, but more importantly, has signed with NeXT to license elements of NeXT's Unix operating system. Neither IBM, Adobe, nor NeXT are talking, but industry observers say we should look for an announcement on this possible menage a trois in September or October.

IBM Upgrades RISC Workstation

RYE BROOK, N.Y. (NB) — IBM has rolled out three new models of its RISC (reduced instruction set) computers, and a new 310-megabyte disk drive. The larger RT machines can handle three of the new drives, giving users access to 930 megabytes of internal data storage. Also, IBM has announced several programs, including AIX/RT VS COBOL, for commercial customers in Unix environments. The new RT model 130 is a desktop unit, while the models 135 and B35 are floor-standing machines. All three have 16 megabytes of complementary metal oxide semiconductor (CMOS) memory, a floating point accelerator, and 114 megabytes of hard drive. Prices are \$23,220 for the Model 130, \$30,595 for the 135, and \$32,165 for the B35.

DEC Pondering MIPS RISC Microprocessor

MAYNARD, Mass. (NB) — Digital Equipment Corp. has acknowledged that it is talking with MIPS Computer Systems Inc. about using MIPS's RISC chip in a Digital workstation. The rumor that Digital was talking to MIPS has been percolating for weeks. Digital has customarily developed its processors internally and moving to MIPS could boost the prospects of that closely-held firm. A move to MIPS by Digital would also be a setback to Sun Microsystems and Motorola Inc., which are trying to woo customers to their reduced instruction set processors. Watch for more fireworks in the workstation wars.

MOSAIC SOFTWARE, Cambridge, Mass., has

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begun shipping TWIN-UX, a version of its TWIN spreadsheet designed for the Unix operating system. "We expect to capture a great deal of market share very quickly," said Mosaic president Richard Bexjian in a news release.

Adobe Jumps on X-Consortium Bandwagon
AMSTERDAM, NETHERLANDS (NB) — Adobe Systems has joined the X Consortium. The consortium was founded by the Massachusetts Institute of Technology (MIT), and promotes, as well as supports, the X Window standard of software. Other members of the consortium include Apollo, Apple, AT&T, Bull, DEC, IBM, Hewlett-Packard, Sun, Tektronix and Xerox.

The X Window system is a standard for displaying multiple applications simultaneously on a computer screen. The idea behind the consortium is to establish a standard for software vendors to work around, rather than having to redesign the user interface for each computer/operating system environment.

Jerry Byma, MD of Adobe Systems Europe, reckons that Adobe's membership will reap dividends for Pagemaker users.

"We're pleased to be counted amongst the leaders in the computer industry whose membership in the consortium will support the continued enhancement and development of the X Window standard. Adobe is a great advocate of establishing standards in the computing industry," he said.

Fujitsu to Join X/Open

Fujitsu will become the first Japanese maker to join X/Open. X/Open was established by 13 major firms in the U.S. and Europe, including ATT, DEC, Unisys, NCR, Bull of France, and Siemens A.G. The group is aiming to standardize UNIX, which was created by AT&T. Fujitsu will introduce kanji characters processing into UNIX.

SUN Launches Nationwide VAR Program

MARKHAM, Ont. (NB) — Sun Microsystems of Canada Inc. has launched a value-added reseller (VAR) program intended to give Sun more presence in vertical markets and general-purpose computing. The company is recruiting Canadian VARs with experience in Unix and technical backgrounds. Sun Canada says the move is aimed at moving its workstation technology into commercial applications "not previously served by Sun." In short, it's the next step in heating up the competition between workstations and high-end personal computers.

Is IBM Getting Tough on RISC?

NEW YORK (NB) — IBM has approached companies about their use of reduced instruction set (Risc) technology, which IBM says it owns through a series of patents. But officials from companies using Risc technology said they have not been contacted by IBM and are at a loss to figure out what Big Blue is talking about. An IBM statement said, "We believe that anyone who is developing an information-handling system would probably need to use an IBM patent." IBM says it is not trying to kill its competitors. The company is willing to license its patents to other companies. So far, Sun Microsystems, Motorola, and Advanced Micro Devices deny that IBM has approached them to discuss Risc technology.

USSR

Too Many Bureaucrats, Too Few Computers

WASHINGTON (NB) — A leading Soviet scientist says the state of science in the USSR is "stultifying," and plagued by bureaucracy and outmoded technology. Writing in *Issues in Science and Technology*, published by the US National Academy of Sciences, Roald Sagdeev wrote that "Soviet research workers and engineers resemble soldiers attempting to fight a modern war with crossbows." While researchers need modern computers and the kinds of tools available in the West, they get "bureaucratic dinosaurs" and absurd quotas for "new discoveries" instead. Sagdeev is the director of the Soviet Space Research Institute and a key adviser to Soviet leader Mikhail Gorbachev.

Soviet Style Software Research

NEW DELHI, INDIA (NB) — NEWSBYTES-EUROPE has learned an interesting perspective on Soviet software research. We were told by a consultant who deals computers in India that most software research in the Soviet Union is done by programmers subcontracted by India's computer industry. It is through India that most IBM systems find their way into the Soviet Union even though IBM pulled out of the subcontinent years ago. Indian programmers are said to work, by and large, in dimly-lit software labs earning very little money. In a related story, NEWSBYTES-EUROPE heard

that Gorbachev's "Perestroika" or restructuring is designed to allow the use of more and more computers in Soviet life and business. Currently there are rumours to be IBM ATs, PCs and compatible systems, but no Macs.

Soviets to Get PC Magazine

MOSCOW, USSR (NB) — Informed sources tell me that *PC World*'s foray into Russia, as the first U. S. computer publication, may also be accompanied by a trade mission. Our inside commissar reports that PCW isn't brokering oil—but does Armand Hammer know about this? Not unless he read it here first.

WINDOWS

New Windows Unveiled

REDMOND, Wa. (NB) — Microsoft has unveiled two new versions of its popular Windows operating environment which feature the ability to make use of more memory, provide easier installation, and provide improved performance. The newest incarnations, dubbed Windows/286 version 2.1 and Windows 386 version 2.1, have "user-based," not "litigation-based" changes, says Microsoft Vice President of System Software Steve Ballmer, referring to Apple's "look and feel" lawsuit against the Windows products. The new /286 version is designed to make use of the extra memory in AT-style PCs, providing up to an extra 50K of addressable memory when more than 1 megabyte of extended memory is available. In effect, the 640K limit for DOS now becomes 690K. The same goes for the /386 version. Both products are shipping now. Windows/286 has a suggested retail price of \$99 while /386 runs \$195. A Windows software developers kit, which can run under OS/2 Presentation Manager with minor modifications, is priced at \$500.

New Group Formed to Promote Windows

REDMOND, Wa. (NB) — Microsoft Corporation, 15 other software publishers, seven hardware makers, and 13 Fortune 100 companies, have enlisted their support for a new organization devoted to promoting the development of Windows and Presentation Manager products. The Windows/Presentation Manager Association, which will emphasize marketing and public relations activities for the two products, is not in direct response to the Apple "look and feel" lawsuit against Microsoft Windows, according to the WPMA's Director Adam Rostoker. "We're not all about negativity," he told NEWSBYTES, "and we probably would have arisen anyway without the suit." Rostoker, speaking for the members, says the lawsuit is "not our concern" and that the buyers are not confused.

"The corporations of American are excited about Windows and Presentation Manager." He says the organization is devoted to the idea of a graphic user interface replacing character-based interfaces, and that even the Macintosh and Unix machines are among members' interests. Annual dues are \$99 for users and \$2,000 for software developers. CONTACT: Adam Rostoker, WPMA, 617/277-9648

Easy Way to Port Mac Programs to Windows

BURBANK, Ca. (NB) — Apple lawyers are reportedly giving the "hairy eyeball" treatment to the latest product which emulates its Macintosh screen display. Screenplay Systems' MCP is a product which can port a Macintosh software product to an MS-DOS machine "with very minor differences in look and feel," according to MACINTOSH TODAY. MCP, written in LightspeedC, is said to be capable of converting any Macintosh application to an MS-DOS application within weeks. The product is an original work, say company officers, and did not borrow whatsoever from Apple's own code.

But Screenplay Systems' officers aren't waiting for the war to get nasty, however. They've sent Apple attorneys a copy for their approval. "We told Apple if we are breaking any laws, we don't want to be; but if we have legal rights to produce a compatibility package like this, we would like to assert them," explains Steve Greenfield, Screenplay's president. No word from Apple on the product yet. Company attorneys are said to be "studying the whole matter." Until the study is complete, however, do not expect to see MCP on the market.

New Headache for Canada's Chartered Banks

Spells Relief for Canadian Business

The Accounting Master Payroll Program may spell the end of the chartered banks domination of the payroll processing market for many small and medium sized businesses. Now business owners can complete their own payroll in house, and save a bundle on bank charges and interest.

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Until now payroll software for personal computers has been either too simple to handle more than the most straight forward situations, or too big and expensive to set up. Accounting Master promises to be the best solution possible, it is easy to learn and inexpensive to buy and maintain.

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Cooking Up A Network

An overview of Networking Options

When I was asked to write an article that would explain how to select a network, I knew it would be an arduous task. I wanted it to sound simple, but how does one simply explain technology on the leading edge of confusion?

Luckily it was Friday, and the weather was fine, so I decided to contemplate the solution in more comfortable surroundings. Besides, I had another problem on my mind. A dozen people were expected on Saturday afternoon for our first B.Y.O.M (Bring Your Own Meat) Barbecue.

At home, it occurred to me that I hadn't really considered how fourteen people (including my wife and I) were going to cook different meals on the same barbecue, and eat at approximately the same time.

I realized that some serious procedural planning would be in order if the first B.Y.O.M. was going to be a success. (B.Y.O.M. was still unproven methodology at the time, but I knew it held the promise of cost-effective weekend entertainment.)

As I considered the problem, I began to realize that organizing this get-together could become complicated. I had visions of fourteen people trying to extinguish a grease fire before it reached their ribs, chickens, and hamburgers, all howling like a bunch of technicians trying to prevent a major system failure.

Suddenly it hit me - multiple cooks, multiple meals, and only one barbecue ... I think what's needed here is a network!

I further defined the problem - What I needed was a system that would let all the users use the barbecue, without interfering with each other, in order to accomplish the purpose of eating, drinking and just all-around good times.

So what does this have to do with networking systems? According to Webster's, systems are definite methods of procedure. More than hardware and cables, networks are procedures for working together, embodied in the necessary electronics. The goal of a networking project, should be to develop a system around an intended purpose.

Four Basic Types Of LANs

There are essentially four network categories - Sneaker-Net, Printer (or device) Sharing systems, Zero-Slot LANs, and Multiuser Local Area Networks (LANs), in order of increasing sophistication and value.

Each type of LAN uses a different method of working together, which is either correct for your purpose, or completely inappropriate. Your first step towards choosing a network should be to determine the category appropriate for your purpose.

Sneaker-Net is the least sophisticated of all four. If you already have more than one computer, you already have Sneaker-Net. You simply place information on a diskette, run down the hall, load it in another machine, and voila ... shared information.

Sneaker-Net

With Sneaker-Net, one person usually creates a file - a document, database, spreadsheet, etc.. The file can be distributed to anyone else, and viewed, modified, or consumed, not unlike the potato salad my wife would be serving. If this only happens periodically, and short distances are involved, Sneaker-Net might be your solution, but read on.

Sneaker-Net's most serious limitation is that improvements made by one user, are not available to any others. So once you've served the salad to your guests, if one adds sliced radishes, and another adds green peppers, their salads are going to taste different. Sometimes that's OK, but not if I want everyone to enjoy my wife's original world-renowned recipe.

Resource Sharing

Do you have a laser printer, plotter, barbecue etc., that everyone wants to use? Are you considering purchasing printers along with upcoming computer purchases? Does everyone want to use your barbecue? A printer sharing device is a simple solution.

Printer sharing devices are inexpensive and

easy to install. They are simple, mechanical switches that you connect all the computers and printers to. I recommend slightly more sophisticated systems in most cases, and insist on it when the users or the printers will be some distance apart.

"Smart" switches are slightly more sophisticated. The difference is that the switch is automatic. No operator intervention is needed, and the switch seems nonexistent to each user. It's like being able to barbecue your steak from your favorite deck chair. If the barbecue happens to be busy, the switch will take your order, and save you a place in line.

But do you just want to share a printer, or do you want to share information as well? If you want to share information, a zero-slot LAN might be the answer.

Zero-slot LANs are so named because no special hardware is needed (hardware that would be installed in an expansion slot). Cables are connected to adapters your computers already have.

Printer sharing is usually a built-in network service, but in addition, files can be easily shuttled from one computer to another. In other words, zero-slot LANs offer a method of sharing the barbecue, and serving your guests, without being run off your feet by requests for salt & pepper, and more potato salad.

Zero-Slot LANs

With a zero-slot LAN, information on the system can be browsed, or copied by any user. The main limitation is that information should be processed by only one user. Zero-slot LANs work well for serving your guests, but your guests can't help you cook.

A zero-slot LAN is a cost-effective alternative to Sneaker-Net, especially if you have a considerable investment in computers already.

If zero-slot LANs sound simple, it's because they are. In fact, their limitations make them a little too simple for many users. They impose many of the same limitations as Sneaker-Net, so care must be taken to ensure that data is being processed by one person only.

Multiuser LANs

A multiuser LAN makes it possible for multiple users to update the same file and process the same data without destroying it. If anyone is helping you cook, or two guests are collaborating on the same dish, you need a multiuser LAN. Multiuser LANs are considerably more sophisticated, and slightly more expensive.

It can be said that zero-slot LANs are designed to shuttle files between PCs, and to accomplish the task faster than you can run in and out from the kitchen. Multiuser LANs are designed for environments where simply shuttling files simply won't work.

Files have to be stored in a single location. Multiuser LANs are like buffet service, where anyone can help themselves without leaving their seat.

Accessing a file on one computer from another is a frequent and normal event, so communication has to be very fast. Special hardware takes care of high speed communications.

The second component of a Multiuser LAN is the software. LAN software controls the network, and is usually independent from the hardware you use for the actual connections.

The software is arguably the more important of the two components. The software provides procedures for working together and in general, keeps the system running smoothly.

File Server VS Peer-to-Peer LANS

Multiuser LAN software falls into two basic categories - "file server" and "peer-to-peer".

File server systems emphasize a central, very powerful computer. Each user can use to his own equipment, as well as printers, disk drives, and information on the file server.

With the emphasis on powerful file servers, workstations often have no disk drives, or printers

at all, thus relying totally on file server services. Think of a file server as a waiter or waitress.

File server systems sizzle (pardon the pun) when access to shared information is a serious requirement, and especially if that information is constantly changing, so most administrative and database systems should really be on a file server.

File servers can handle fourteen orders, and carry fourteen trays at once. That's service! I couldn't picture myself doing that, so I knew that I wouldn't make a very good server.

As the name suggests, under peer-to-peer systems all computers are created equal. All users have access to all printers, and all files, on all systems, at all times, unless you prevent it for security or policy reasons.

"I'll pass you the salt, but I'm not going to let you try my ribs."

Peer-to-peer systems are worthy of consideration in situations where there is already a considerable investment in computing power, and where peer-to-peer flexibility is important. Peer-to-peer systems take full advantage of every byte of storage, and every ounce of processing power available. You can put one person in charge of the barbecue and another in charge of the kitchen. Everyone else can go about their business, or lend a hand where one's needed.

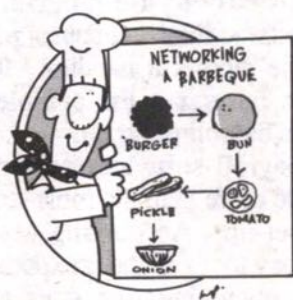
One drawback of peer-to-peer systems, is that information still has to be stored some place. Depending on the level of activity, a workstation can get bogged down dealing with requests from other users.

If one of the workstations is overworked, it will become consumed (my apologies, again) in requests, and may never get a chance to eat. You can end up dedicating a workstation strictly to requests, which is what a file server is intended for.

Multiuser peer-to-peer systems offer simplicity, file shuttling, printer sharing and multiuser capability, as long as your multiuser requirements are minimal.

Choosing between the various types of networks, is really a matter of choosing the appropriate set of procedures. There are only a few systems competing in each category, so once you have the right method in mind, there will only be a few options to choose from.

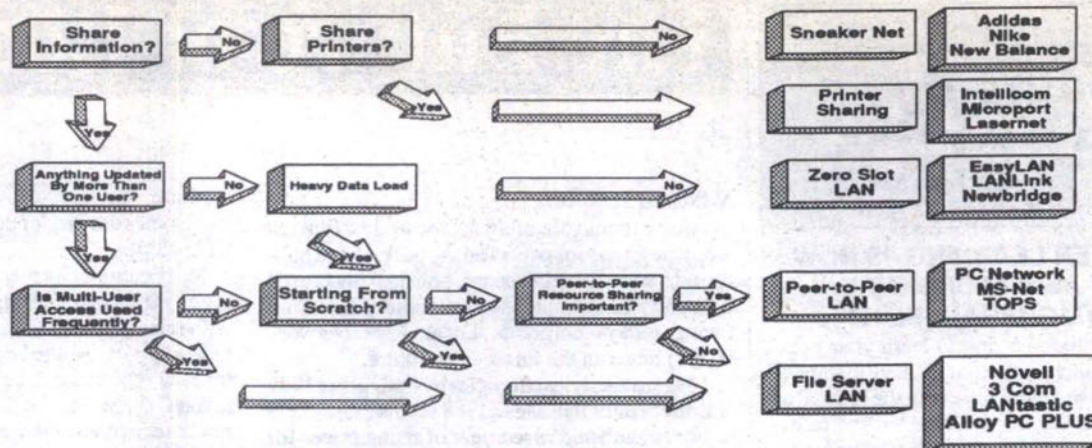
Contemplating my barbecue had helped me explain networks, but it had done nothing to prepare me for Saturday's party. I couldn't envision my yard under six feet of copper wire, and besides, how do you jam a hamburger through a cable anyway? People were just going to have to help themselves.



Robert Hitchens is a partner in CompuFind, a firm whose purpose is to provide unbiased computer advice.

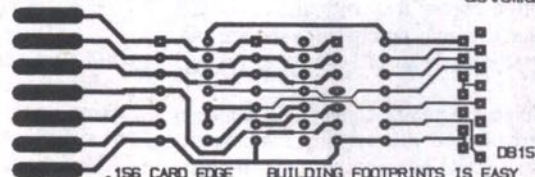


Network Decision Guide

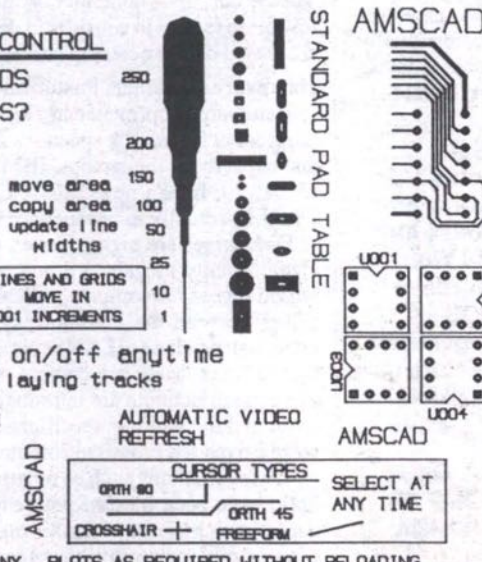


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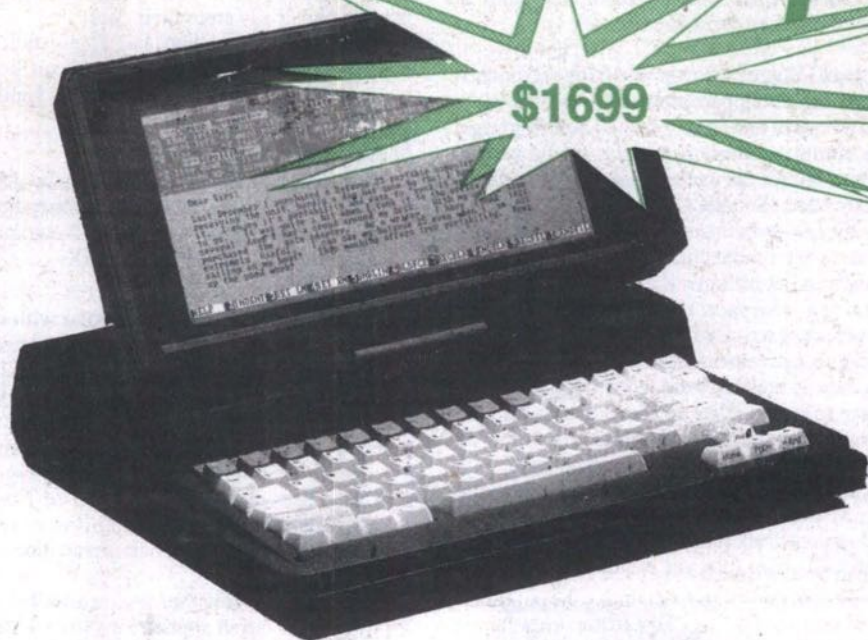
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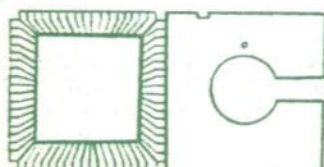
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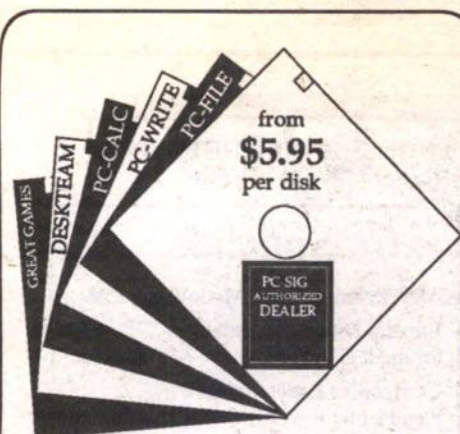


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The Future of Local Area Networks

Which Way to Go?

After a month off, allowing me to slow (but not stop) the growth of papers on my desk, I have bulldozed a path to my keyboard, polished my crystal ball, and will attempt to sort out some of the issues facing today's corporate Local Area Network (LAN) buyer in the foreseeable future.

I began this series of articles by noting that 1987 was the year of the LAN. 1988 seems most likely to be remembered as the year of rising prices for non-obtainable DRAM chips. All has not been quiet on the new developments front however. Today's corporate computer decision maker has a few more factors to consider in determining a micro-based data processing strategy.

Hardware - Smaller, Faster and Cheaper

Hardware improvements are continuing to progress at breakneck speed - witness the power and capacity of the laptops, IBM's 25MHz PS/2 Model 70, Intel's new 386SX CPU, 1 megabit DRAMS actually in production.

Disk drives are bigger, faster, and less expensive. Twenty megabyte drives will be obsolete within a year, as compact, reliable 40 megabyte drives become the minimum system choice in either a stand alone or LAN environment. WORM Optical disk drives are coming on very strong - more manufacturers are introducing new models (with wildly varying specifications), and read/write drives are promised sometime in 1989.

Wiring methods such as twisted pair and fibre optic have been blessed with engineering standards, paving the way for mass market production of compatible communications components based on these media. LAN purchasers will be able to economically choose communications media to achieve the best mix of cost, performance, flexibility, and ease of installation/maintenance.

Wide Area Communications products are faster, less expensive, more flexible and more reliable. Modems, Gateways, and Bridges allow far more connectivity between similar and dissimilar systems spanning the globe. Information may now be distributed to locations where it is most often used locally, but still be available easily as necessary from remote locations.

In general then, the hardware prices for performance continue to decline, but there is a catch - new software places higher demands on the more powerful systems, in effect raising the minimum capacity required for a specific task.

Software - Bigger, Slower and More Expensive

Software developers are able to meet the growing demands of the marketplace by building larger, more complex programs, which would execute slower if not for the increased power provided by the hardware. Sounds simple so far.

Reality enters into the picture when you realize that at a very fundamental level the hardware is simply moving billions of electronic 1's and 0's around at a great pace, under the absolute control of a program written by people. Programming language improvements have not progressed nearly as rapidly as the hardware technology.

New software releases take orders of magnitude more time and effort to produce than they did years ago, requiring software vendors to start work on new products years before their introduction. Microsoft has essentially completed their development work for products based on the Intel 80486 CPU chip (not yet in production), and is

working with Intel to help finalize features desired for the 80586 CPU chip!

More complexity means more room for errors, causing havoc with release schedules and technical support. Missed deadlines for new products can be costly - market share can be lost, and never recovered. Furthermore - third party support may disappear - witness Fox & Geller's demise due to the delays in dBASE IV. End users are the most creative people in the world - they are bound to find all the obscure "bugs" which the developer's testing missed, requiring a larger technical support infrastructure to diagnose and fix.

All this adds up to - more expensive software!

Which Is More Important?

At a recent dinner meeting, Bill Gates, the founder and CEO of Microsoft reflected that where software often comes free with the hardware, within a decade we may purchase the software we need, and get the hardware included free! Joking? Perhaps.

It is true that as increased connectivity between types of hardware becomes a reality, manufacturers (including IBM) are coming under tremendous pressure from their customers to be more compatible with each other. This, in conjunction with software advances is blurring the distinction between different types of hardware.

Novell has demonstrated a version of Netware which runs on a DEC VAX, another which allows Macintosh's and PC's to transparently co-exist on the same network, there are all kinds of gateways to larger IBM systems, and more appearing daily in the micro to mini arena. As these dissimilar environments become connected, software becomes the "glue" which binds them together, so that the user need not be aware of anything other than the environment (DOS, DEC, 3270, Macintosh etc.) that they are most comfortable and familiar with, regardless of the actual system(s) used to physically store their data.

Both operating system and application software products are by far the predominant factor in today's data processing workgroups. Hardware follows the software's instructions.

Workgroup Operating Systems

Operating systems are the interface between an application program, and the hardware. For our purposes, we will look at Novell's Netware, OS/2 and the LAN Manager, and UNIX.

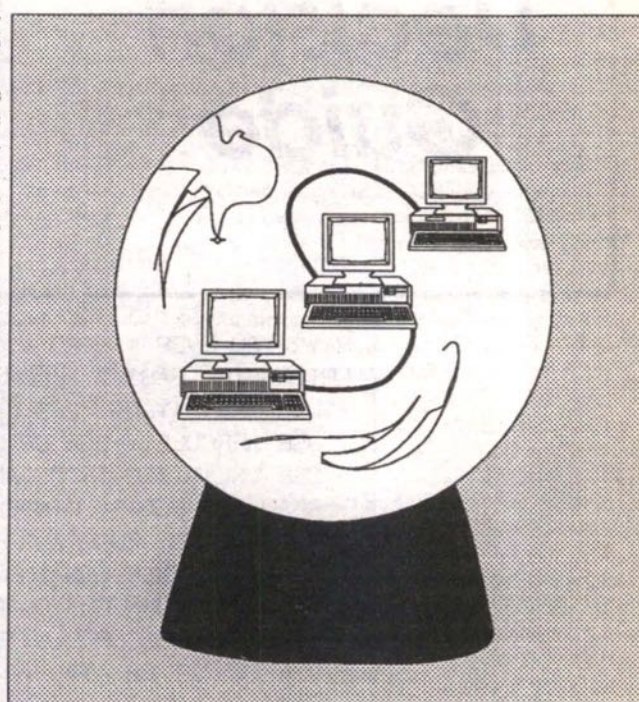
Novell Netware

Netware is by far the most popular with a 50% share of installed Network Operating Systems. It is quite mature, (currently in its 9th major release) and offers a variety of built-in fault tolerant facilities such as automatic bad block lockout, the ability to transparently mirror disks, incomplete transaction back out, and UPS monitoring. Performance has always been on top of Novell's priority list, as has Netware's ability to run on the widest range of network communication interfaces.

Until recently, Netware was primarily a platform for DOS based applications to execute in a multi-user environment. In the last year, Novell has added OS/2, DEC VMS, and AppleShare as other alternative environments supported directly by Netware. In addition, powerful and flexible gateways to IBM mainframe and other large computing environments are available.

This is consistent with Novell's long stated goal of providing Universal NetWare Architecture, whereby Netware will provide access to all corporate computing environments, transparently to the user. Novell is demonstrating portions of that goal now.

This is not to imply that DOS is dead, a demonstrated version of DOS 4.0 is apparently ready to go and due to ship to end users by October. Despite its limitations, there is a large body of DOS based applications installed, guaranteeing several more years to go.



Crystal ball gazing looking ahead at LAN's

OS/2 and the LAN Manager

Microsoft and IBM developed OS/2, a multi-tasking workstation operating system which offers significant advantages over DOS. The 640K RAM limit is gone, application programs may now be as large as necessary. Since it is a true multi-tasking OS, several operations may now be carried out simultaneously in a far more elegant fashion than the crude TSR approach required by DOS.

In order to communicate with other stations, a product called the LAN Manager is required. Microsoft has one, IBM has their own. Microsoft licenses portions of OS/2 and LAN Manager to hardware manufacturers. The catch is that you do not have to license everything, you can pick and choose what you want, and develop the rest yourself. In addition, some parts, like the LAN Manager are not complete - Microsoft licenses the basic framework, and the hardware manufacturer does more work to get a finished product.

This state of affairs has two important ramifications - first OS/2 is not as generic as DOS, there will be different "flavors" from different vendors, each of which is tied to a specific manufacturer's hardware, and may not run on others. Secondly, application software may take advantage of one vendor's implementation of some feature, which is not supported in other versions (IBM has stated that their version of LAN Manager will not necessarily be compatible with Microsoft's).

In an industry which has been fueled by standardization, this is an odd state of affairs. Software developers may find that their products do not work on all OS/2's, and corporate purchasers may be forced into inflexible hardware decisions based on software limitations.

It is still too early to determine what problems this may cause. OS/2 is definitely the new kid on the block, and as such, there is very little real application software available, and few users yet. Certainly, all of the major software vendors have enthusiastically announced support for it (they have little choice) and products will arrive "real soon now" (next year?).

An interesting note - the LAN Manager, which was released to OEM's by Microsoft recently has an update coming in the next few weeks. Part of this update is improved caching software which will "help close the performance gap between LAN Manager and Netware" according to Microsoft.

UNIX

UNIX is the oldest and most venerable of multi-user operating systems. It is a mini-computer style OS rather than a LAN, since it typically is configured as a powerful central CPU connected to many dumb terminals.

In its early days, UNIX suffered from incompatibilities between different manufacturer's "flavors" of the system. Software developers had to write to the lowest common denominator of UNIX versions, and peripheral hardware, particularly terminals (programs which required 15 function keys were not useable on less expensive ter-



"E-Mail"

minals which had 10).

UNIX's popularity has gone up and down over the years. Upgraded standards were introduced a couple of years ago, and once more UNIX was gaining in popularity. IBM, DEC, AT&T to name just a few big players announced major support for UNIX. Unfortunately, it may not happen, as UNIX seems to have shot itself in the foot again. In May of 1988, amid fears of being left out by the AT&T/Sun Microsystems joint development agreement, most other players (including IBM and DEC) formed the Open Software Foundation to develop their own standard. Now AT&T is considering spinning UNIX development off into a separate company. So, no standard this year folks, but maybe only 2 next year ... ?

There is a significant base of very good application software, particularly for some verticals. Nothing like the selection available in the DOS world, but all of it initially designed for multi-user operation (as opposed to applications initially developed for single user DOS and later patched for multi-user LAN operation). In fact, you may get UNIX and not realize it - for instance Banyan's VINES LAN Operating System is based on UNIX servers. UNIX won't go away, but the lack of consistent standards and real vendor support will prevent it from making significant market share gains.

Where Is The Future?

We who work in LAN environments now take for granted the reality of multiple networks, all connected, possibly spanning huge geographical distances, with gateways to "foreign" environments. This represents a very small segment of the computer world, the majority of users are still restricted to a specific hardware vendor, and thus a fixed view of the computer resource.

Software developers with similar products in different hardware environments must maintain and improve several versions of the same program. This becomes more and more intolerable as R&D and support costs escalate. They are keenly interested in the ability to maintain one product common to all environments.

Slowly, but surely, we seem to be making progress in this direction. Manufacturers realize that they cannot impose their "standards" on users, those who try lose market share. As the environments become closer, more universal software tools will become available to enable developers to maintain a single product over different hardware systems.

In the distributed LAN processing environment, specialized boxes are appearing, such as high speed servers, archive servers, diskless LAN stations, communications servers etc. Thus a LAN can be configured for the most cost effective capacity.

As more and more different systems become connected, users will have a choice as to how they view the computing resource, a single station on your desk will provide access to the information you require, and present it in the manner you are most comfortable with, regardless of how it was retrieved.

How To Choose

Looking for a LAN? First determine what needs to be automated NOW and in the near future. Find the software required to do the job, ideally with local support and local references. Do not be blinded by hardware claims, at this point, hardware does not matter. If you are not a "computer person", hire professional advice from a reputable consulting firm. Sorry, but Joe, your neighbor, who does some spreadsheet work on his secretary's PC at the office is NOT an "expert", although he will freely dispense advice for which you, not he, will be responsible should you follow it.

Knowing which software package will do the job will determine what kind of system you need to implement it. Purchase enough power and capacity to operate now and for the near (18 to 24 months) future. Remember, in a LAN environment, you can add power in incremental steps as you need it, you do not need to replace the existing system. Have an installation/implementation plan - there will be some disruption for your staff which planning and training beforehand can minimize.

Mike Wolfe is a partner with Softrak Systems Inc., responsible for the sale, installation, and support of Novell LAN's. He also teaches introduction to LAN's through the Vancouver School Board.

LAN Language

Glossary of LAN Terms

ADDRESS: A unique location in a computer's memory. Also a unique number identifying a workstation.

APPLICATION: Work that is done on a computer such as accounting, spreadsheet, word processing etc.

BIT: Binary digIT - must be 0 ("off") or 1 ("on").

BRIDGE: A link between 2 LAN's, usually of different topology's.

BUFFER: An area in RAM used for temporary data storage.

BYTE: Normally the 8 bits what represent a character in binary.

CACHE: A buffer area specifically used to speed disk access by storing large portions of files in memory.

COAX: A medium speed type of wiring similar to cable.

CONSOLE: The screen and keyboard of a SERVER.

CRASH: Slang term meaning that hardware or software has stopped functioning properly.

CPU: Central Processing Unit - the "brain" of the computer, executes all instructions.

DMA: Direct Memory Access - a technique whereby data is moved around in memory simultaneously with other CPU tasks.

DOS: Disk Operating System - the most popular personal computer operating system.

DRAM: Dynamic Random Access Memory - refers to the computer chips which make up the computer's working "memory".

E-MAIL: Electronic Mail.

FIBRE OPTIC: A high speed type of wiring using light beams to transmit signals in special optical cable.

GATEWAY: A link between a LAN and some other system, usually a mini or mainframe.

HARDWARE: Physical computer equipment - you can touch it.

HASHING: A technique used to reduce the effort required to locate a specific data.

INTERNETWORK: Two or more networks connected via a bridge which now act as one larger network LAN Local Area Network - consists of 2 or more micro-computers connected together to share information.

MODEM: MODulator/DEModulator - a hardware device which sends data via telephone lines.

MULTUSER: Used to describe operating systems which allow many users at different stations to share data and hardware.

MULTITASKING: Used to describe operating systems which allow the same station to execute 2 or more programs simultaneously.

NODE: Any station on a LAN OS Operating System - the control program which manages execution of other application programs OS/2.

A: A new operating system which uses today's more powerful micro-computers more fully RAM see DRAM.

RECORD LOCKING: A critical LAN concept which prevents multiple users from simultaneously accessing the same data in a shared file, ensuring data integrity.

SERVER: A special LAN station which contains information and/or resources shared by other stations.

SHELL: A special program loaded into each network workstation which performs the networking tasks not handled by the local DOS or OS/2.

SOFTWARE: Instructions to the hardware. Software programs cause the hardware to execute the desired applications.

STATION: A personal computer on a network. **SPOOL:** Sequential Peripheral Output On Line - refers to the control of shared printers such that multiple print jobs from different workstations can share a common printer.

TOPOLOGY: Refers to the method in which components of a LAN are connected.

TV COMMUNICATION: Generally sending data from one station to another.

TWISTED PAIR: A low speed type of wiring generally equivalent to telephone wiring.

WORM: Write Once Read Many - refers to a class of optical disk storage devices where data can be written once, but read over and over.

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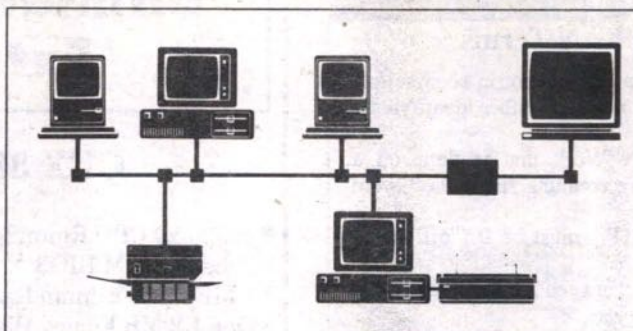


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TOPS

You have numerous PCs in your office and you recently got a Macintosh in to do Desktop Publishing, or you have a Mac office and you added a PC to be better able to service your clients with PCs. Now the question is how do you get them to work together?

You might consider looking at TOPS 2.0 a network solution designed to integrate the use of PCs and Macs into a relatively seamless working environment. TOPS can be used on an exclusively Mac or a PC environment, but its features shine in the integration of the two.

TOPS takes a distributed server philosophy which eliminates the need to have an extra computer that is the dedicated server. This also allows for greater network resilience. If one computer goes down, it doesn't bring down the whole network.

TOPS is also a true file server as opposed to the simpler disk server. This allows a more sophisticated form of networking. All users on the network can access stored data and "network smart" applications can allow multiple users to access a file concurrently without compromise to data integrity.

TOPS is not what you would call lightening fast. This is a function of Appletalk which moves along at about 230K per second, about the speed of floppy disk access. As with all LANs, it gets slower with more activity on the network. It is however about 200 times faster than a 1200 baud modem or 25 times faster than a 9600 baud null modem connect between two machines. Using TOPS as a strictly PC network, speeds can be three times faster than the PC to Mac connection because of the a special software driver called FlashTalk. This puts the speed up more like 690K per second, still not fast compared with high speed networks, but better than the AppleTalk speed.

How it Works

TOPS is really a series of programs and hardware used to bridge the two worlds. The packages you need to buy are: TOPS for the Mac (software), TOPS for the PC (software), and a FlashCard, an add-in board for the PC. (Alternatively, you can use Apple's own AppleTalk Card for the PC, a TandyLink Card from Tandy or a Hercules Network Card Plus) One of each of the software packages must be purchased for each machine on the network and one FlashCard is required for each PC. Each software package has a serial number, and can only be used once on the network. Included in the Mac software is a file translator and a desk accessory print spooler. Included in the PC software is a program which allows the PC to use printers on the network and the print spooling capabilities. For applications which lack drivers for PostScript, TOPS sells a separate program which will convert any files which will print on an Epson FX-80 to PostScript files.

Setting up a TOPS network is a relatively straight forward affair. The Mac side is especially easy to anyone having familiarity with the Mac interface. TOPS runs on Appletalk or PhoneNet cabling so if printers or other peripherals are already being shared, it is a matter of dropping some software into the system file, rebooting and you are ready to run with the main TOPS program running as a DA under the Apple menu.

It may take a few minutes of "mousing around" to figure out the idea of "mounting" and "publishing" a volume. You "publish" a "volume" (or folder) to make it accessible to others on the network. You "mount" a volume when you want to make it appear on your desktop as another disk drive. To use an analogy, "publishing" is like putting your files up for sale. "mounting" is when someone buys it to use on their computer.

DOS Software

The PC side as with most things PC requires actually opening the manual. First you must install the FlashCard into an empty 8-bit slot. Then you add a line to you CONFIG.SYS file. Finally you reboot. Next run the software install program to load the necessary files onto the hard drive. Then type "LOADTOPS" and "TOPSMENU" to get to the TOPS program. Having done that, you are ready to "publish" some volumes. This is easy with a menu driven process. It seems you can publish only four volumes at a time on a PC.

TOPS on the PC can be used either from the menu driven TOPSMENU program, or from the DOS command line.

Some of the TOPS programs are memory resident in the networked PCs. This steals about 200K from your PC applications. This potentially can interfere with larger programs which require more of the computer's memory.

It is definitely a thrill to see the office PC's hard drive appear as an icon on the Mac screen. Files can then be copied to and from the PC with the ease characteristic of the Mac user interface. No more head scratching to remember the arcane "COPY *.*" command. Not only can you store either Mac or PC datafiles on whatever

machine you choose, you can also store applications as well. This means you could put a program like MacDraw onto your PC hard drive and run it on your Mac. Granted it runs relatively slowly, but it can be useful in environments where hard disks are in short supply. Unfortunately you still can't run Mac software on your PC.

File Translation

The file translation program is called TOPS Translator. This allows file translation between common PC and Mac programs. Unfortunately it, unlike the main TOPS program, is a stand alone program which means you must exit the program you are working on to use it. It would be much smoother if they had it integrated into the main TOPS program as an option when you transfer files between computers. This file conversion utility is the same one used in by DaynaFile and MacLink. It contains file conversions for a variety of word processing, spreadsheet and database applications. Desktop Publishers will be disappointed by its lack of graphic interchanges.

In addition to the file translation capabilities contained in the TOPS translator, programs such as Pagemaker, Excel and Word offer the ability to save their files in either Mac or PC format, facilitating transfers.

Printing from a PC

For many users who just want to get their PC onto the office LaserWriter, the manual is a bit of a disappointment. It doesn't include these instructions in the quick start segment. Instead you have to slog through the technical portions to figure it out. Eventually, you will decipher the fact that unless your PC program supports PostScript already, you are will need to buy their separate program called NetPrint to convert from Epson FX-80 print files to PostScript. You can download your files from the DOS level by accessing TPRINT followed by [device type/Y] [device name/Y] [zone name/Z] [file name/e]. Fortunately you can develop a data file to retain these characteristics, and just access TPRINT and your file name. Most files which lack PostScript information will have to be printed in Diablo mode and you end up with Courier typeface, a fairly prosaic typewriter style font. Even files such as those generated by Word which do contain the PostScript instructions, must be modified because Word thinks it is printing to a LaserWriter via the serial cable not over the AppleTalk link.

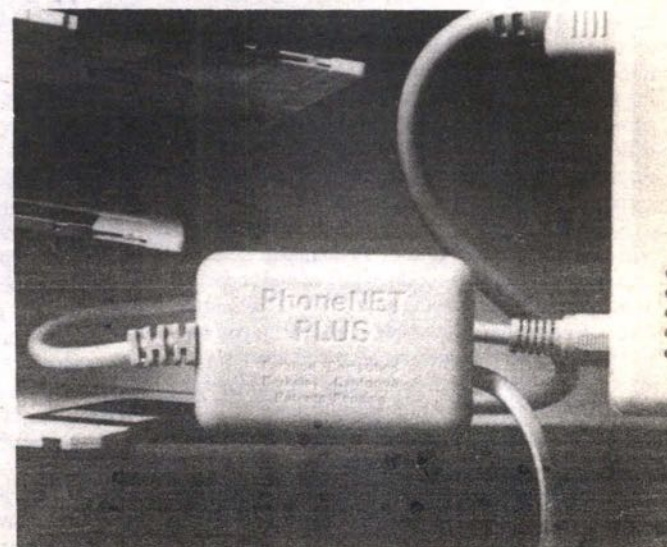
Who Should Buy TOPS

If you just have to pass to odd file back and forth to your Mac or PC, there are much less expensive ways to do it. The cheapest solution is using telecommunications programs on both sides and a null modem to link the two computers. This is sometimes cumbersome to set up and use, but it is cost effective. If however you regularly need to move files back and forth between the two environments, or wish to share printing resources (i.e. a LaserWriter), TOPS offers an effective and well executed solution.

Things I Wish TOPS had

TOPS lacks E-Mail capabilities. The printing set up is not the most straight forward on the PC side and I wish the NetPrint were included with every package. Full PostScript access would be ideal from the PC side instead of making it a separate product. TOPS also lacks the sophisticated network statistical reports available from other PC LAN software. The ability to assign costs for resources used would be great in multi-department companies. For all these shortcomings, it is smooth to use, easy to set up, resilient and does a great job. The feature I am really looking forward to from TOPS is their implementation of FlashTalk on the Macintosh. This little black box will probably clip on the back of a Mac and promises to increase the somewhat leisurely pace of Apple Talk by a factor of three. It is apparently in the works at TOPS. - KSK

Pricing: Tops for the Macintosh \$224, Tops for the PC \$224, FlashCard \$295, NetPrint \$273 **System Requirements** 512 K Mac or better, PC with at least one open slot, Hard drives highly recommended **Company:** TOPS: A Sun Microsystems Company Available from most Apple Dealers.



TOPS runs on either Apple Computers own AppleTalk or the less expensive PhoneNET from Farallon Computers

NOVELL 4 STATION LAN

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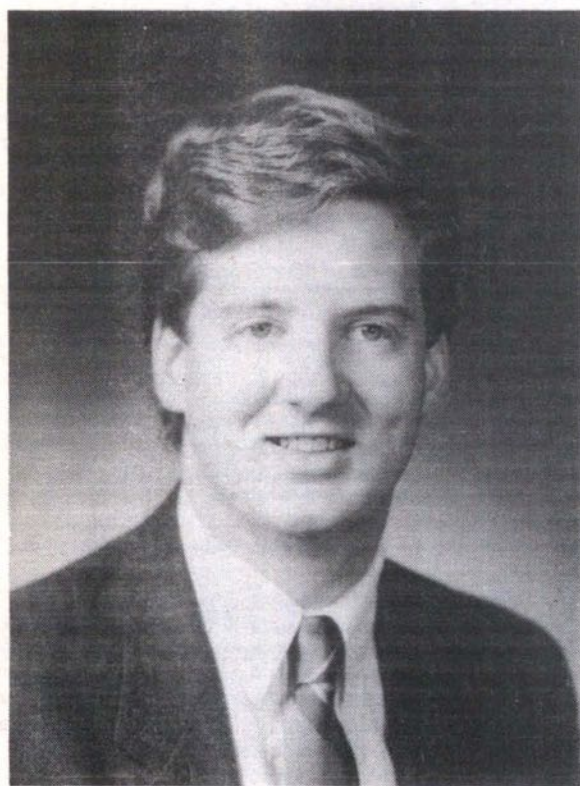
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The Shareware Shelf

EasyNet II - A Shareware LAN

If you are looking for a simple local network system for two PC's and one or two printers, EASYNET II may be just what the doctor ordered. This network system requires only RS232 ports, some twisted pair cable, the EASYNET II software, and DOS 3.1, 3.2, or 3.3. EASYNET II has access speed of 115,000 bits per second with a maximum uncut cable length of 70 metres. EASYNET II permits different microcomputers to link together in a shared resource environment, however, problems may result if the system bios is an older version. Installation is automated by the program, but some initial confusion may be expected during set-up due to its versatile nature. Each PC is uniquely named, and the program uses these names to access files, drives or printers on the second computer. You can limit access to a hard drive by assign any drive letter to any directory. For example, to limit access on a PC to a wordprocessor, you need only to assign a drive to that directory (the "G: drive" on the first PC is actually the "C:\PCWRITE directory" on the sec-

ond PC.) The user on PC2 can access only a single directory on PC1's hard disk. You could install a dot matrix printer on PC1, and a daisy wheel on PC2, and either PC could share access to either printer. EASYNET II comes with a printspooler program to minimize the 'waiting to finish printing' period, allowing the PC's to continue with productive work.

EASYNET II is a product of EasyNet Systems Inc., Mississauga, Ontario. The shareware version of EASYNET II is on a single archived disk, and comes with a "Readme" file to describe the set-up procedures and how to construct the linking cable. The package is available complete with cable and manual for \$199, but you can register your shareware version for less money and receive technical support at a lower cost. EasyNet Systems also produce Easynet 116 for larger networking systems.

Product Source: EasyNet Systems Inc., 4283 Village Centre Ct. Mississauga, Ontario L4Z 1S2 (416) 273-6410 - Gord Simmonds

IBM

PUBLIC DOMAIN SOFTWARE

APPLICATIONS

- ☐ **GENEALOGY ON DISPLAY** - (2 DISK SET) The number one genealogy program in the library. Now goes with \$594 to have a complete package.
- ☐ **LABELMAKER** - Our favorite label file and maker. Menu driven.
- ☐ **GENEALOGY FT** - From Pine Cone software. To help you track those "skeletons" in your closet.
- ☐ **FAMILY HISTORY** (2 DISK SET) - Family history, ancestor and descendant charts. Sample programs.
- ☐ **FORM LETTERS** - LOTS of samples of the most commonly used business letters. Modify!
- ☐ **MAIL MASTER** - After creating your mailing list, send mail to the special only "target" groups you specify.
- ☐ **THE WORLD DIGITIZED** (3 DISK SET) - (1 of 3) - Locations of over 100,000 points of interest.
- ☐ **MSDOS-CPM/80 INTERFACE** - CPM lovers! This program allows you to transfer information between and emulate CPM & MSDOS.
- ☐ **MSAV MSAY** - is an unusual personal finance manager. After several interrogatives it predicts your future.
- ☐ **WORLD** - Statistics and Demographics for all of the nations of the world.
- ☐ **FREEWAY PAYROLL SYSTEM** (3 DISK SET) - Freeway Payroll Program. So flexible you may have to let that extra bookkeeper go and do it yourself.
- ☐ **IN CONTROL** (3 DISK SET) - This comprehensive business system puts you in control of marketing and sales information.
- ☐ **FRONT OFFICE** (3 DISK SET) - A control system designed to manage direct sales, prospecting, sales orders, and cost/profit analysis.

COMMUNICATIONS

- ☐ **PS-TALK** - The classic "freeware" communication program.
- ☐ **RBBS** (4 DISK SET) - Our most popular bulletin board system. Become a SYSOP and start a bulletin board.
- ☐ **OMODEM** - Without a doubt the fastest and best communications software you can buy at any price.
- ☐ **FIDO NET** - Bulletin Board System. Perhaps the easiest to run.
- ☐ **PROCOMM** - Communication software that makes a hackers dream come true.
- ☐ **WILDCAT BBS SYSTEM** - OMODEM type BBS system that will allow the novice to become a SYSOP. Good documentation!

DATABASE MANAGERS

- ☐ **PC-DBMS** - A relational database management system that provides on-line help and screen editing functions.
- ☐ **PC-FILE** (2 DISK SET) - The King of Shareware database managers. A second disk now makes PC-File faster, easier to use, and much more powerful. You should upgrade to this newest version.

EDUCATION

- ☐ **PC-PROFESSOR** - Learn Basic the easy way. One of the best tutorials on BASIC.
- ☐ **EQUATOR** - A teaching tool for math, science and finance.
- ☐ **PC-DOS HELP** - Type "help" for the DOS command you forgot.
- ☐ **PC-TUTORIAL** - A first course in computer usage covering various aspects of MS-DOS. Good!
- ☐ **PC PROMPT** - Fascinating on line memory resident DOS helper that also supports BASIC, EDLIN, DEBUG, and TURBO PASCAL.
- ☐ **LANGUAGES** - A foreign language tutor that includes French, Spanish, German, Italian, and Hebrew.

FINANCE

- ☐ **PORTSWORTH PACKAGE** - Evaluates your ever changing stock portfolios.
- ☐ **PC-GENERAL LEDGER** - An exceptional accounting system. Used by some CPAs.
- ☐ **PC-CHECK MANAGER** - Keeps multiple checkbooks in balance.
- ☐ **TAX FILE DBS** - Tax record keeping system that saves you money on April 15.
- ☐ **LOAN AMORTIZATION** - For output to screen or printer. Lots of on-line help.

- ☐ **MR BILL** (2 DISK SET) - Prepare invoices, client report, audit trail, etc.
- ☐ **PC ACCOUNTING SYSTEM** (2 DISK SET) - General purpose ledger system that includes payroll, depreciation, accounts receivable/payable, inventory processing 1099's and a good general ledger.
- ☐ **PC-ACCOUNTING SYSTEM** - See above.
- ☐ **PC-PAYROLL** - Handle all payroll problems with this complete menu-driven payroll system. Includes taxes, reports, forms, etc.
- ☐ **PURCHASE ORDER SYSTEM** - Keep track of all vendors and outstanding purchase transactions with this comprehensive system.

GAME

- ☐ **TOP GAMES** - The most requested arcade type games.
- ☐ **ARCADE GAMES** - Another goodie bag of top Arcade games.
- ☐ **MISC. GAMES** - Good selection of educational, adventure, and arcade games.
- ☐ **PINBALL RALLY** - You asked for it! Here are three pinball games that vary in complexity. PINBALL, RAIN, TWILZON2.
- ☐ **THE GOLDEN WOMBAT OF DESTINY** - This is one of the best text adventure games in the library. Discover The Forbidden City.
- ☐ **"CRONUM'S CASTLE" ADVENTURE GAME** - Eragon Adventure. Great!!!
- ☐ **"LORD OF THE UNDERLAND"** - Another adventure module. Encounter Orcs, Hobgoblins, Goblins with an Enchanted Sword.

GRAPHICS

- ☐ **PC-PICTURE GRAPHICS** - Drawing package allows you to zoom, color, and store pictures.
- ☐ **PC-KEY DRAW** (2 DISK SET) - A small CAD system. New version makes this a highly versatile drawing system. Lots of demonstration files.
- ☐ **PC-GRAPH** - Allows user to create graphics from PC-File report files.
- ☐ **DANCAD3D** (2 DISK SET) - Allows the composition of 3-D wire frame animation. Without a doubt there are no commercial programs available like this regardless of the price.
- ☐ **DANCAD3D DEMO** (2 DISK SET) - DANCAD3D animates the screen. Saves the screen at 4 million pixel resolution! Customers tell us it's the greatest!

LANGUAGES

- ☐ **CHASM** - Cheap assembler with tutorial.
- ☐ **EXTENDED BATCH LANGUAGE** - Ver 2.0 a user-supported utility from Seaware.
- ☐ **P-BASIC** - NASICA work-a-like for clones, etc.
- ☐ **ESIE** - Build and generate an expert system.
- ☐ **PROLOG & UNIFORTH** - Complete with editor and documentation.
- ☐ **VISIBAL-PASCAL** - A useful Pascal compiler for learning Pascal. Allows the user to watch the execution of code.
- ☐ **TINY PASCAL COMPILER BUILDER** - Learn to create your own Pascal Compiler and language compiler/savings and investment portfolio. User friendly!

MUSIC

- ☐ **PC-MUSICIAN** - Compose music on your PC, save and play again.
- ☐ **PIANO MAN** - Play your PC keyboard like a piano.

PRINTER UTILITIES

- ☐ **EPSON PRINTER UTILITIES** - Spool, set up routines all designed for Epson codes.
- ☐ **PRINTER UTILITIES** - Smorgasbord of utilities and tools.
- ☐ **SIDE WRITER** - Sideways work-a-like to allow the printing of large reports sideways on a printer. Source code included.
- ☐ **WSMMXB0** - Allows WordStar to print more ways than you imagined on an Epson Compatible printer. Useful for mathematical and scientific notation.
- ☐ **LABEL MASTER** - Maintain, sort, and print all kinds of mailing lists. Has automatic date stamp and large comment field features.

SPREADSHEET

- ☐ **TURBOCALC/AS-EASY-AS** - Two exquisite spreadsheet programs. AsEasyAs is a 1-2-3 Work and look-a-like. Produces expert x-y graphs and bar charts.
- ☐ **LOTUS 1-2-3 TEMPLATES AND MACROS** - Why spend hours of writing your macros when these are ready made? Modify them yourself.

UTILITIES

- ☐ **ULTRA UTILITIES** (1 OF 2) - Recover lost files, modify sectors, etc. Like Norton's.
- ☐ **SYSTEMU** - Build a menu driven menu system. Excellent for hard disks.
- ☐ **TOP UTILITIES** - All of the most requested utilities on one disk.
- ☐ **PATCHES** - Make back up copies of some of the most popular commercial programs with this collection.
- ☐ **PC-DESKMATES** - Better than Sidekick and all of the rest of the memory resident desktop utilities.
- ☐ **UNPROTECT** - Various routines to disconnect protection schemes.
- ☐ **PC-TOOLS** - Lots of useful utilities with both EXE and "C" source code. BROWSE, DUMP, MERGE, WORD COUNT, ROFF, GREP, etc.
- ☐ **DBS-KAT** - Diskette cataloging system for archival purposes. Database can hold up to 9,999 diskettes and 16,000,000 files.
- ☐ **MENU-MASTER** - Allows one to access up to 12 applications on your hard disk. Makes PC/AT operation "user friendly".
- ☐ **POWERMENU** - Forget about subdirectories forever with this "push button" menu master.
- ☐ **HOMEBASE** (2 DISK SET) - A complete desktop organizer that many folks say is much more powerful than Sidekick. Now Shareware!!!
- ☐ **XANADU UTILITIES** - As the name implies XANADU is a programmers fantasy of short cuts and utilities to change colors and file attributes.
- ☐ **EASYMENU** (2 DISK SET) - See #739 & #740. Save time and keystrokes as you run all of your hard disk programs with this great "automatic menu program".
- ☐ **AUTOMENU** - Version 3.01. Access your programs with a unique menuing system that puts you back in control of things.

PROCESSING

- ☐ **PC-WRITE** (2 DISK SET) - Our most popular full featured word processor that is actually faster than WordStar. Quicksoft has now added a new spell checker that is superb!!!
- ☐ **DICTIONARY** - Dictionary type spelling checker.
- ☐ **NEW YORK WORD** (2 DISK SET) - Powerful word processor that creates keystrokes macros, split screen editing, mail merge and more. Watch out Micro-Soft!
- ☐ **PC TYPE** - Jim Button's contribution to a full fledged word processor.

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ImageStudio Alters Reality

Product: ImageStudio System Requirements
Macintosh Plus or better. Hard disk drive advisable.
Company: Letraset Suggested Retail Price: \$750

What is it?

ImageStudio is a software program for editing black and white photographic images which have been scanned by an electronic image scanners. It is a bit like a souped-up MacPaint program designed for use with high resolution scanned images. It features a number of specialized editing tools including a fingertip tool, a water drop tool, a charcoal tool, and a paintbrush with which you can create marvellous custom fills.



Don't trust anymore UFO photos with ImageStudio around Speed and Screen Clarity

Working with such images is time consuming and some what of a blind flight on a Mac Plus or SE. There is a considerable speed improvement on the Mac II as well as the ability to see more detail of grey scales in the images on the higher resolution screens. This is not to say that ImageStudio can't be used on a MacPlus or SE, it just means sending more proofs to the Laser Printer to achieve the desired effects.

Editing

Image editing is the specialty of the house with ImageStudio. With a little practice, reality, or photographic reality at least, can be altered beyond belief. When you see what can be done with this program, you won't trust any of those UFO landing, or sasquatch siting photos again.

ImageStudio is a deep program in the sense that it is feature laden, and provides a large variety of effects to the dedicated user.

File Handling

ImageStudio normally saves in a compressed format. Choosing Uncompressed speeds up the saving and opening of the file, but the file takes up 2-3 times more disk space. The image can be saved as either TIFF, EPS or MacPaint (72 DPI) format.

Printing Options

ImageStudio has a wide range of printing options. You can scale the image size in printing (or in saving to disk), as well as alter the dither patterns for some very interesting printing effects. The "Set Halftone" command allows you to alter line screen, angle or define screen custom screens. These effects break the image up into dot patterns which can then be used directly to create plates for printing.

Output Resolution

Another issue is output resolution. At 300 dots per inch, the resolution of most laser printers, the photographs look grainy. This graininess is easily forgiven by printing on newsprint which absorbs the imperfections. This type of reproduction is unsuitable for magazine quality publications. The image must be printed on a higher resolution printer such as a Linotronic 100 or 300, at resolutions from 1200 to 2400 dots per inch to get away from the "jaggies" seen at 300 dpi.

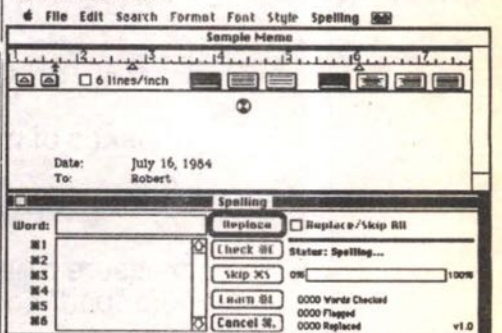
The Price of Admission

ImageStudio is a bit of a puzzle. It is definitely not a program for every one. Working with the images requires first and foremost access to an image scanner. Next you need memory, both RAM and storage because the files are very big. The more RAM you have, the higher the resolution you can open your document as. You also need lots of time. Image editing, like photographic development is a craft which requires skill and patience to build in order to create the effects you desire. Finally, you need a good reason to get together all

MacWrite 5.0 Adds Spelling Checker, Disappoints Users

Product: MacWrite 5.0 System Requirements:
Any Macintosh Company: Claris Suggested Retail Price: \$175

Apple's new independent software company, Claris has released MacWrite 5.0 as a major upgrade of the venerable MacWrite. MacWrite is the program that got the Macintosh on its feet and convinced many people that a graphic interface and WYSIWYG (What You See Is What You Get) were the way of the future. Well bad news folks, MacWrite the once sparkling gem of Apple's eye is looking pretty tired and old in comparison to the new contenders.



Macwrite 5.0's great new spelling checker. Note the cute spinning beach ball cursor.

What Claris has basically re-released the old MacWrite with a 100,000 word spell checker and a few other minor tweaks.

The tweaks include some new keyboard shortcuts including a Command-A to Select All. The program will now accomodate larger screens, and will run under Appleshare.

The spell checker is by Microlytics, the folks who brought us the great Word Finder Thesaurus. Fortunately it is a very good spell checker. It runs interactively as you type, beeping or flashing when you spell a word wrong, or in a batch mode, all at once at the end of your session. In addition there is an expandable user dictionary which is easy to edit. In all it is a very likeable implementation. An interesting feature of this spell checker compared to others on the market is that it takes its cue from the whole word being checked as opposed to the first few letters. For example if it came across the word "Velcome" it might suggest "Welcome" as the correct spelling.

MacWrite is still a very solid product, and will meet the needs of basic word processing for many users. It may however not be the best value for the money when compared by features to either Microsoft Write or T/Maker's WriteNow soon to be released Version 2. (see table). In addition to these features, there are considerable speed differences in common operations.

According to Claris MacWrite continues to sell very well. This is easy to understand because it was originally bundled with the purchase of every Mac giving it an installed user base of over 600,000 users. Many people apparently prefer evolution to revolution and this is a very minor mutation indeed.

Low End Mac Word Processing Comparison

Product	MacWrite	WriteNow	MS Write
Version	5.0	2.0	1.0
Spelling Checker (words)	100,000	100,000	80,000
Font size range	7-24 pts	4-127 pts	7-72 pts
Maximum Document Size	240 pages	2,000+ pages	50 pages
Number of open documents	1	limited by memory	30
Auto Numbering Footnotes	No	Yes	Yes
Automatic Repagination	Yes	Yes	No
Multiple Footers/Headers	No	Yes	No
Variable Line Spacing (in points)	No	Yes	No
Suggested Retail Price (Can \$)	\$175	\$242	\$245

of the above and spend the time on your chosen image.

According to Tom Tracey, Regional Manager for Letraset, ImageStudio has been very popular with newspapers which use many photographs regularly. In skilled hands, ImageStudio can save time in repairing a photograph rather than dispatching another photographer to retake the picture which sometimes can be impossible. Photographs can be easily altered or enhanced to make features or images stand out.

The traditional PMT and photographic screen process can often be faster and cheaper than working extensively with an electronic image. The electronic image however gives much more flexibility in last minute resizing, retouching and actual image altering. ImageStudio provides a whole new tool chest to the photographic retoucher.

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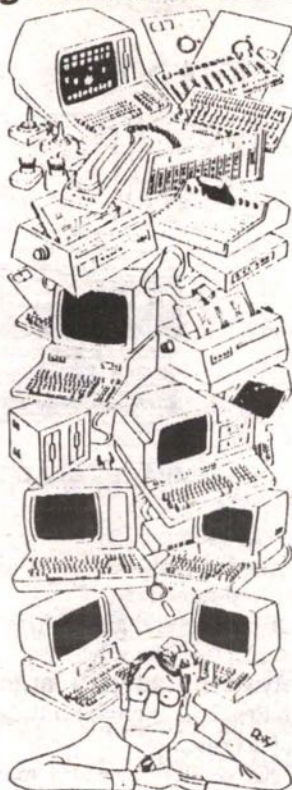
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Macintosh Viral Survival • Prevention • Detection • Cure



The Merriam-Webster Dictionary defines virus as:

1. an infective agent too small to be seen with a light microscope
2. something (as a corrupting influence) that poisons the mind or spirit.

But, what is a computer virus? How does it infect your computer system? How can an infection be detected and can the infection be prevented? How can we cure those systems already infected? The computer virus can be prevented and/or defeated with a little care and a few pieces of valuable Public Domain and Shareware software.

A computer virus is a piece of computer code that is intended to be self propagating, spreading infectious resource codes throughout system files and programs that it comes in close contact with. Files containing "resources", such as applications and the "System" file, are the unwitting carriers of the virus, first becoming infected and then spreading the infection to other applications. In simplified terms a computer virus will write additional resources to any application operated on the same computer or network as the contaminated file. These newly infected files then become carriers themselves and spread the infection to other applications, thus starting a seemingly endless chain. This infection can be spread to any application on the same disk or any additional floppy or hard disk mounted at the same time as the infected application is being run. This can also include other floppies and hard disks operating on a network system.

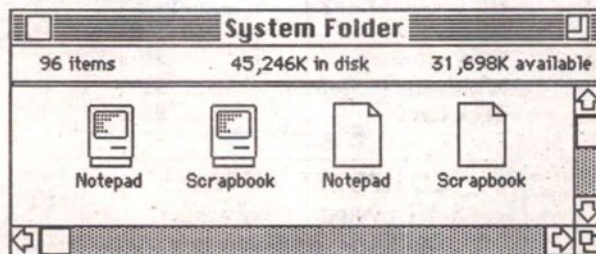
Though these viruses are relatively new to the Macintosh computer family, various permutations have been around for the past few years on other computer lines. Their severity may range from that of a nuisance virus, which may interfere with the productive use of your software, to the destruction of data. At present there are only a few known viruses which have been spread on Macintosh systems.

The first virus to be discovered has become known as the "MacMag" virus, due to the admitted development of this virus by a magazine publisher from Montreal, Canada. This virus appears to have been relatively harmless and was supposed to have been programmed to remove itself after presenting a "World Peace" message in March of this year. MacMag gained world recognition as being the first confirmed Macintosh virus and having been posted for a short period of time (less than 24 hours) on a national bulletin board.

Before I go any further, and raise the hackles of other Mac enthusiasts, let me clarify that I do not feel that any computer virus is harmless. These contaminating resources which infect a users system, without their knowledge, can cause an unknown amount of grief. My use of the term "relatively harmless" is relative to the amount of damage that more destructive viruses are capable of doing. No computer virus is truly harmless.

The second discovered virus was named the "Scores" virus, after an invisible file which it creates and places in your System Folder. The Score virus was discovered this spring but is suspected to have been around since as early as last September. It has been the centre of much attention and its' source is currently under investigation, in the U.S.A., by the F.B.I. Scores was first discovered in Dallas, Texas and is suspected to have been developed there by a disgruntled employee after being dismissed from a local electronics firm. This virus has since been discovered in computers ranging from major hardware and software manufacturers to U.S. Government computer systems. It is far more powerful and complicated than the MacMag virus and has retained the secrets of its' created purpose in spite of its dissection by some of the top Macintosh experts in North America, including those at Apple Computer Inc.

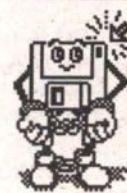
Scores virus has been known to cause problems with other programs, most notably with MacDraw, and leaves some very distinct signs of its existence in a Mac's system. A reliable sign of its presence is the changes which it causes to the "Notepad" and "Scrapbook" icons in the System Folder. Assuming that your system has these two desk accessories installed, you can take a quick look at their icons to verify that they are that of the miniature Macintosh, the same as those of the System and Finder. If your system has been infected and you have both of these desk accessories installed, their icons will be changed to that of a generic document; a blank, dog eared, page of paper.



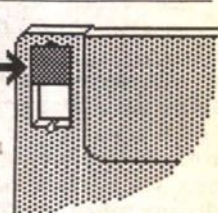
A Scores virus infection can often be detected by checking the icons for the Notepad and Scrapbook Files. If the Icons have changed from the "Mac" icon to the "Generic dog eared page, your System is likely infected.

When these viruses were first discovered, the recommended method of detection and remedy was to search and clean your files with a resource editor such as Apple's Macintosh Resource Editor, ResEdit. This is a complicated approach, and only appropriate for

the more advanced Mac users. Apple suggests that the user back-up all non-infected documents, re-initialize the floppy disk or hard disk and replace the applications, from your locked Master Disks and the backed-up documents. This is a time consuming project, only practical if the user has been using working copies of all applications and had locked the Master Disks before mounting them in the computer. Well, in spite of all the preaching by the "experts" and the warnings that accompany new applications, few users have taken all the precautions to protect their entire library of Master Disks. The lack of clean Master Disk has resulted in many owners, of infected systems, attacking their software with resource utilities, trying to remove the various offending resource one by one. The results are generally less than satisfactory and often various applications are irreparably damaged.



The "Write Protect" tab on all your Master Disks should be at the top of the slot, opening the hole through the disk. This will prevent your Master Disks from being infected and allow for an easy recovery.



In answer to this need for reliable detection and removal of viral infections several programs have come onto the Public Domain and Shareware market. They have taken varied approaches but are united in their intent to help users prevent, detect and help remove their venom with minimal destruction to otherwise healthy systems.

Rx Virus RX by Apple Computer

Virus Rx is a stand alone application which lists resource files, such as INIT and cdev, damaged applications and applications which are suspected of possible infection. Many of the files, which appear on the list, are not infected making things somewhat confusing for many users. Apple has anticipated this and provides you with warnings of files which are suspect or infected and a summary of the likelihood of your system being ill. The summary is easy to understand and the list can be saved for later comparison or to assist in the viral removal process.

VirusDetective by Jeffrey Shulman, \$15.00 shareware
VirusDetective is a desk accessory which will find and alert you of the existence of the known viral strains. This viral aid, unlike the others, can be modified by the user to identify new infectious resources that may arise.

Interferon by Robert J Woodhead Interferon scans your disk checking for possible infections. When a viral resource is detected the application is listed at the bottom of your screen along with a code that can be checked against the supplied list of known viral resources. An option is provided for removal of the offending resource.

Ferrit by Larry Nedry

Ferrit is a specialized virus detector designed to sniff out, and if directed, remove the Scores virus. Ferrit has been reported to leave some benign virus resources in an application and for this reason I would recommend using "Kill Scores", a similar application.

Kill Scores by MacPak and Apple Corp of Dallas
Like Ferrit, Kill Scores is designed to detect and remove the Scores virus from your applications. It is an easy to use application that requires nothing more than selecting a disk or application and click your mouse. Prior to using this or any other application, which removes resources, insure that you have an accurate back-up copy of your floppy or hard disk.

Agar by Bill Krimmel, Aba Software

Agar is a small 361 byte file that just sits on your floppy or hard disk, waiting to be infected. When a virus adds resources to an application the application's size is increased. It then becomes a simple matter to periodically check the size of Agar to determine if it has grown in size, indicating an infection. The current version of the Finder displays the file size, in both bytes and kilobytes, in the file's "Get Info" window.

These are the most common viral detection aids currently available and appear to do their intended jobs well, but an ounce of prevention is worth a pound of cure and these applications are only of use to inform you after your system has become infected.

Don Brown's CE Software was the first to come out with a viral aid and has been the only one to take a preventative approach with Vaccine. Vaccine is placed into your System Folder where it self installs each time your Mac is booted (started up.) If any resources try to install themselves in your System file a "Beep" and warning message will sound and you will be presented with the option of allowing the process to continue or saying "NO" and returning to the Finder. Some applications are intended to install resources and must be identified and allowed to install by selecting the "YES" button.

These files will help you prevent viral infections or detect the virus before serious damage is done. Every Mac user should periodically check their system for infection and should have a "Viral Survival Kit" setup for this specific purpose. As my donation, to the effort of eradicating these viruses, I have prepared a "Viral Survival Kit" disk and suggest that you acquire a copy. Copies can be obtained, at no charge, directly from myself, Plus

Computers and The Law

New Copyright Law Affects Computer Users

Computer software is now protected by copyright. On June 8, 1988, Royal Assent was granted to Bill C-60, the first major changes to the Copyright Act in 64 years.

64 Years to Upgrade

The old Copyright Act has not been amended substantially since 1924. The Act protected various "literary works" including writings, maps and charts. Since that time, technology has given us radio, TV, copiers, computers, and other devices undreamed of when the original Copyright Act was written. The advent of widely available computer technology has been the Copyright Act's latest and most difficult challenge.

Under the current amendments, computer programs will be protected regardless of the medium and will be eligible for full copyright protection for the life of the creator plus 50 years.

Backups Not Included

The protection offered to software by copyright is unique in that it has two exceptions. The first exception will allow those in lawful possession of a computer program to alter or adapt it to suit their personal needs without infringing copyright. The second exception will allow the making of a backup copy of the program. Computer programs will be protected by copyright even if they were created prior to the June 8, 1988.

Needless to say, these changes will provide software developers with much needed certainty. If Canada's high tech, research and development industries are to flourish, this certainty is critical. However, with cheap, high quality copying of all copyrighted materials possible, strong enforcement is also needed. The new Copyright Act provides that enforcement.

Up to \$1,000,000 in Fines or 5 Years in Jail

The piracy provisions of Bill C-60 specify that any person who sells, distributes, exhibits or imports for sale, any infringing copy of a protected work is guilty of an offence and is subject to fines up to \$1,000,000 and imprisonment for up to five years. These are significantly increased penalties designed to reflect our economic realities of commercial piracy and to give the new legislation teeth.

Programmers and Software Companies Happy

While programmers and commercial distributors of software will be delighted with the new changes, the countless individual software users will be curious as to how this new law affects them. It is fair to state that most personal computer users own at least one if not many unauthorized copies of software. How does this new legislation affect them?

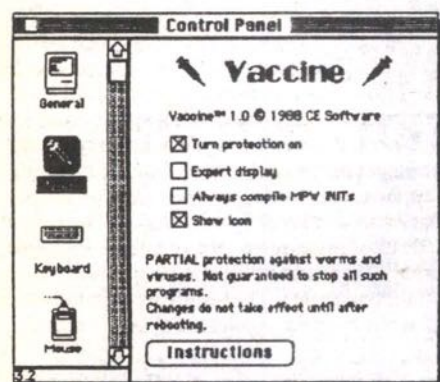
How It Will Affect Individuals

The short answer to that question is "very little." While trading copies of programs with fellow computer users is technically a violation of copyright and an offence punishable by fines and jail terms, it is not the sort of violation that the legislation is designed to attack. The legislation was amended to meet the burgeoning software piracy industry and to provide software developers and distributors with the protection and certainty needed to encourage Canada's high tech sector to grow.

Software Pirates Beware!

However, software users who trade software widely and often, or use copyright protected software in public or commercial manners without previous authority are breaching the Copyright Act and are exposing themselves to the risk of civil action by the owner of the copyright and to the stiff penalties provided by the Copyright Act. The Copyright Act makes no distinction as to the size nor economic value of the infringement. Software, pirates beware!

Nancy Matheson is a lawyer with PIERCE, VAN LOON Barristers & Solicitors. 681-4434 Suite 3220, 650 W Georgia St. Vancouver V6B 4N7



Computing, or from the PD libraries of either Mainland Macintosh Users' Group or Apples B.C. ("Write Protect" the disk before mounting and follow the instructions provided.)

If your examination determines that your system is infected you must make a decision as to the best way to tackle the removal process. This decision will be greatly influenced by the type of system you are operating and the likelihood of your Master Disks being infected. A floppy only system can easily be cleaned by transferring data files and replacing applications from your Master Disks. The infected disks must be re-initialized prior to usage. A hard disk drive system is more complicated and time consuming as there is often more data involved and the safety procedures are far more complicated. The status of your Master Disks will determine if you should try to eliminate the viral resources or re-initialize your hard disk. If you are operating on a networked system I would strongly recommend that you obtain some expert assistance. Networked systems are the most prone to viral infections and are the most complicated to clean. The possible combination of determining factors and the complications of additional infections during the removal process makes this far too complicated for most users or network administrators.

Here are a few points to keep in mind to help you from becoming another infection statistic:

1. Check your system with the "Viral Survival Kit" or a similar disk of your own making on a regular basis; daily on a network or systems available to several users.
2. Only use Public Domain and Shareware files which have been filtered for viral infections.
3. Insure that the Write Protect tabs on all Master Disks are set to the "Locked" position prior to inserting in any disk drives.
4. Install Vaccine (12K) and Agar as preventative and easy detection tools.
5. Do not allow anyone to insert a disk, which has not been checked for viral infections, into your system.
6. Check any of your disks used on other systems prior to reusing them on your system.

Although many people tend to think of viral infections as coming only from Public Domain and Shareware applications, they can come from any applications including new commercial packages. This was evidenced lately with a leading software manufacturer shipping new Master Disks, already infected at the factory.

With a little care and prevention you can beat the viral breeders without abstaining from your enjoyment of Public Domain and Shareware software. Thank you and please practice safe computing.

Ron Haidenger's years of public domain and user group experience have made him one of the best and most complete sources of Macintosh public domain and shareware software in the province of B.C. For information about public domain and shareware software, for yourself or your user group, give Ron a call at (604) 574-3813.



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John Oliver School, 530 E. 41 Ave	
DTP: Ventura Call for dates	\$135
DTP: Pagemaker	\$135
VAN.SOFTWARE CENTRE 300-1190 Melville St. 669-9800	
Call for starting dates.	
PageMaker, Ventura Call for dates	
Introduction to Ventura Aug. 8,9	
Advanced Ventura Aug. 12	
Introduction to Pagemaker Aug. 22,23	
Advanced Pagemaker Aug. 26	
Ventura Publisher vs. Pagemaker Aug.11,24	

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A look at what Desktop Publishing is all about.

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Autocad, Customizing Autocad	\$175
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November 1,2,3,1988, Vancouver Trade and Convention Centre. Call for details 433-9549 or 433-5121. Sales: Helen Levasseur	
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Apple: Mystery Writing	\$65
Intro Programming in "C" Aug. 8-9,10-11	
Intro to Programming in PASCAL Aug. 2,3,4	

USER GROUPS

Amiga User Group Meetings (PaNorAmA), BCIT, Rm 129A	
General Meetings 2nd Wed each month 7:30 pm	
Programmers: 4th Wed each month 7:30 pm	
Apples BC Computer Society Exec Meeting Aug. 8, BBQ/Picnic, Aug. 14 at Barnet Marine Park, Bby. Call Lorne or Joan Walton, 467-6062.	
Apple II User Group Meeting BC Apple Society, Burnaby Rugby Club, Kiyo Masuda 437-9935	
Apple III SIG Monthly Kiyo Masuda 437-9935	
Beaver Valley Commodore Club Meets first Tues every month at Montrose School Library. Call John Vink 367-6426 B.C. Unix User's Group meets 4 times a year. Call George Pajari 925-2555, 2545 Queens Ave, West Van V7V 2Y9.	
Clipper Developers Association 1st Mon SFU 873-0747	
Commodore Club 1st Tues Sunset Comm Centre 738-3311 Forth	
Interest Group Speakers and Tutorials on Forth hardware, software and applications. Meetings: 7:30 first Thurs of each month, BCIT main bldg, 3700 Willingdon Rm. 1A-324	
Kaypro User Group Vancouver Portable Computer Club 3rd Monday at Kaypro in Richmond (CP/M) 278-5776	
Mac User Group Meeting BC Apple Society, WCB Building, 6951 Westminster Hwy (Kiyo Masuda) 437-9935.	
Mainland Mac Aug 10, 7:00 PM Rm 115 Kwantlen College, Surrey, 574-3813, Ron Haidenger.	
Maple Ridge Computer User Group 467-2647 M.R. Sr. Secondary School 7:30 PM,	Free
NEC APC Users Group Bi-monthly Lee 980-5825	
North American Amstrad User's Group. For newsletter, membership application send S. A. S.E. to: 65-13880 - 74th Ave, Surrey V3W 7E6 PHONE: 597-0881 R. Scott	
Novell Netware Users Peter Whitelaw 669-8789 monthly	
Port Coquitlam Computer Users Group Commodore Amiga & IBM 1st and 3rd Tuesday each month 7:30 pm, Poco Rec Centre 2100 Wilson Ave 942-4286	
Tandy 1000+ Club Meeting Monday Aug. 15, 7:00 pm at Kwantlen College, Newton Campus, Rm 209 or 211. Call Len Boscoe 574-5419	
The New Apple Alliance May Chow 435-7609 last Saturday of month in Kitsilano Neighbourhood House.	
TI Computer Club Central Richmond. Meets 2nd Wed of each month. Phone Keith at 261-2739	
Trace (Richmond Atari Club) Thompson Comm. Centre Linus Lane Richmond, 272-5789 1st & 2nd Monday 7:30-9:30	
Vancouver Netware User's Group Les Lebbant 275-2829. Meets 1st Mon of the month.	
Vancouver PC Users Group Planetarium 438-6009, \$20/year membership. 7:30 pm 2nd Thurs	
Vantari 34-3046 Coast Meridian, Pt. Coquitlam B.C. Judy Hercus 873-1941 Hastings Comm. Ctr 3096 E Hastings, Aug 10th, 7:30-10:30 pm XL/XE & ST	
Wang System User Association 736-8841 ext 227 J.P. Doiron	
99 Users Group Meets every Thursday 7-10 p.m. at Cameron Rec Centre, Burnaby. Call Ron at 522-2598. 1st Thurs Games, 2nd Thurs General 3rd Thurs Tutorials 4th Thurs Copying Prog.	

INTEGRATED SOFTWARE

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Symphony Database Aug. 10	\$175
Symphony Spreadsheet Aug. 18	\$175
Smart Spreadsheet Day 1 Aug. 25	\$175
Smart Spreadsheet Day 2 Aug. 26	\$175
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200-247 Abbot St Van 682-5448 Call for schedule	
PBSC TRAINING CENTRE 1140 W. Pender, 689-7272	
Symphony 1 Aug 9	\$175
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Symphony 3 Aug. 26	\$175
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John Oliver School, 530 E. 41 Ave	
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Call for starting dates.	
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MACS A.M. 8:30 - 12:00 a.m.; P.M. 1:00 - 4:30 p.m.	
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AUGUST 1988

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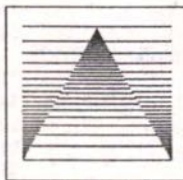
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Board Name	Phone #	Hrs	SysOp	Host Type	Baud Rates	Comments
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Babel-17	736-9288	24	Dave Reite	IBM Opus	3/12/2400b	FRP Games and some interesting games!
Basic'ly Computers	584-9811	24	Bob Satti	Opus 2 lines	12/24/9600b	Good files / no games.
Basic'ly GameLine	589-6852	24	Bob Satti	Opus 1 line	3/12/2400b	Excellent selection of games!!
Bob's Trading Post	688-7621	24				
Brad and Mike's BBS	420-9485	24				
or	420-2641	24				
Burnaby BBS	524-9564	24	Mike Stephen & Brad Holland	IBM Opus	24/9600b	
Catalyst	433-0214	24	Kevin Smith	IBM Opus	3/12/2400b	Political Activists BBS.
Comstar	521-0886	24	Bryan Bedford	IBM PC Board	3/12/2400b	\$\$ Pay board: No download until pay
Conexions BBS	526-8208	24	M. McLeod	IBM Phoenix	12/2400b	Good online games and file areas.
DataNet	276-8088	24	E. Kraushar	IBM Fido 12e	3/12/2400b	
Deb's BBS	738-2773	24	Kevin Gillett	IBM Wildcat!	3/12/2400b	Formerly Fast-80.
Dial-a-File	736-3453	24	Debbie Cooper	IBM	12/2400b	4 or 5 lines, lots of files!
D.I.R.A.C.	939-2081	24	S.Fairbairn	IBM Wildcat!	3/12/2400b	
DSS Telcom	946-8530	24	Strider	IBM Generic	3/12/2400b	
Final Frontier	590-1185	24	Duncan Smith	IBM QuickBBS	3/12/2400b	Vancouver's only Planet Busters game!
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Forth Board	434-5886	24	Rene Ertzinger	IBM Opus	3/12/2400b	Run out of BCIT Math Department.
Foundation	538-4469	24	Jack Brown	IBM Opus	3/12/2400b	Tradewars game!
Generic BBS	874-9767	24	Harry Seldon	IBM Opus	3/12/2400b	Generic BBS Software.
Heiko's BBS	689-9684	24	Mark Rademaker & Ted Lee	Phoenix	3/12/2400b	
Hem Board	929-3776	24	D. Hankinson	IBM Phoenix	3/12/2400b	
Hot Line	533-0421	24	Ken Sterdan	Bryan Bucci	IBM Opus	3/12/2400b
or	585-3122	24		Opus	1200b	
Indepnd't Connection	321-1366	24	Aylwin Shu	IBM Phoenix	3/12/2400b	
The Lab	522-4242	24	Joe Smith	IBM Generic	3/12/2400b	
Late Nite BBS	278-3569	24	The Spark	IBM Orig.	3/12/2400b	INFORMAL BBS - Pseudonyms allowed.
Lizard Lounge	926-3197	24		WWIV	3/12/2400b	
Mind Meld BBS	438-7885	24	Jason	IBM Fido	3/12/2400b	
Moose Lodge	946-8300	24				
Nodding Off Comp	597-3154	24				
Northern Lights	588-0789	24				
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PSG Vancouver	228-9706	24	Jamie Penner	IBM QuickBBS	3/12/2400b	Good File Areas.
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RBBS-CYVR	270-4473	24	Steve Pershing	IBM Opus	3/12/2400b	
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Speakeasy BBS	435-7699	24	W. Carmack	IBM RBBS-PC	12/2400b	PC SIG LIBRARY! <CD-ROM>
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TuskNet	251-9666	24	L. Clarke	IBM Opus	3/12/2400b	TI and IBM.
Universal Empire	266-1531	24	R. Smith	IBM Opus	3/12/2400b	
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Warp Zillion	596-1243	24	IBM Wildcat!	Ted Lee	3/12/2400b	XENIX MULTIUSER BBS SYSTEMS Vancouver
MAC-Based Systems						
Bottom Line	583-1085	24	T. Nieuwenhuizen	Red Ryder	3/12/2400b	\$\$ Pay Board <Two months free>
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T.R.A.C.E.	272-5888	24	Atari Users	BB/ST	3/12/2400b	
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Final Frontier	590-1185	24	Cory Muzyka	QuickBBS / IBM	12/2400b	
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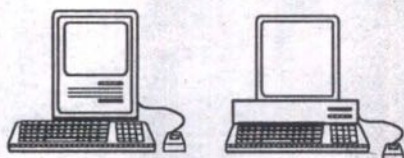
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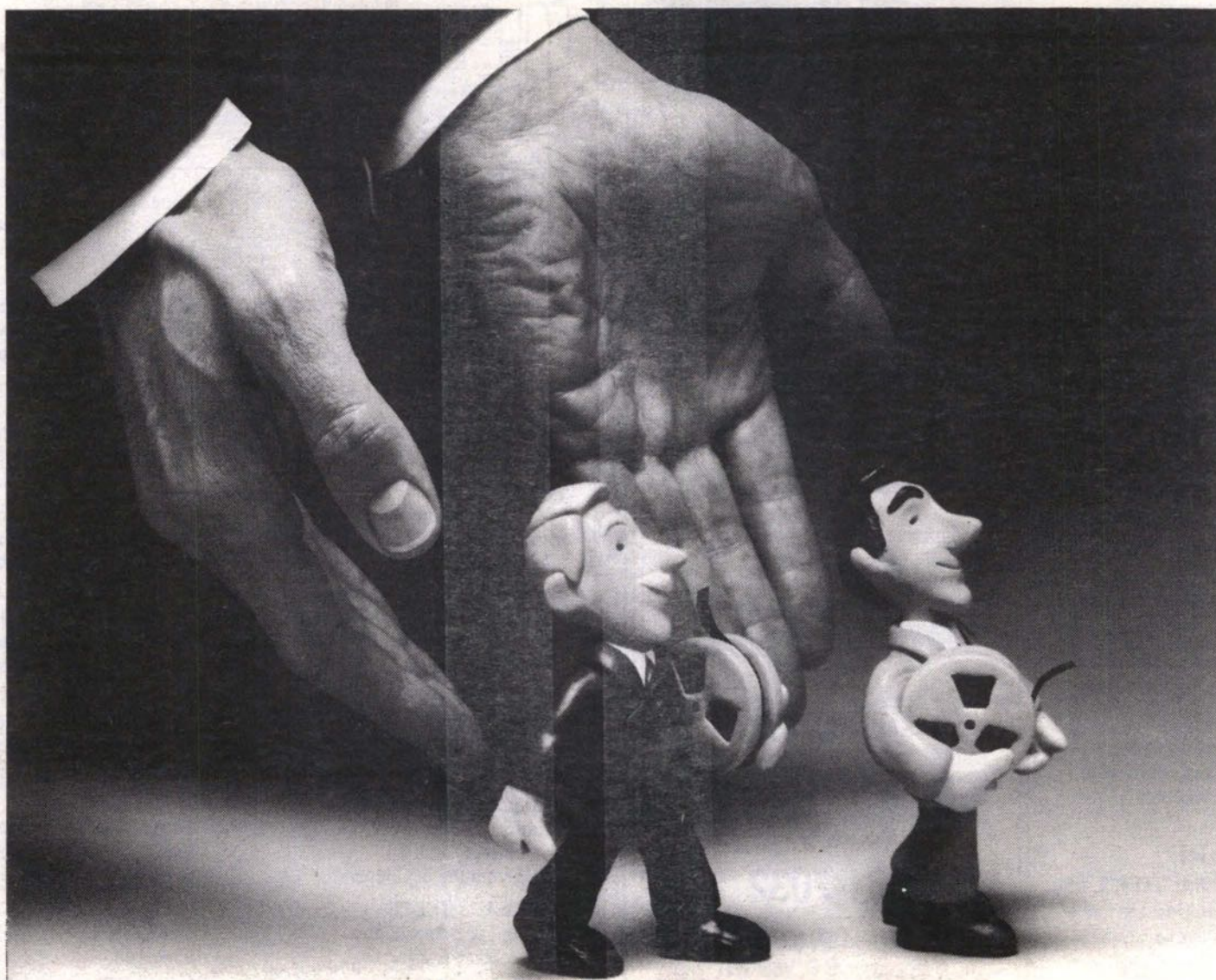
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